

GLOBE Data Architecture - Graphics Only

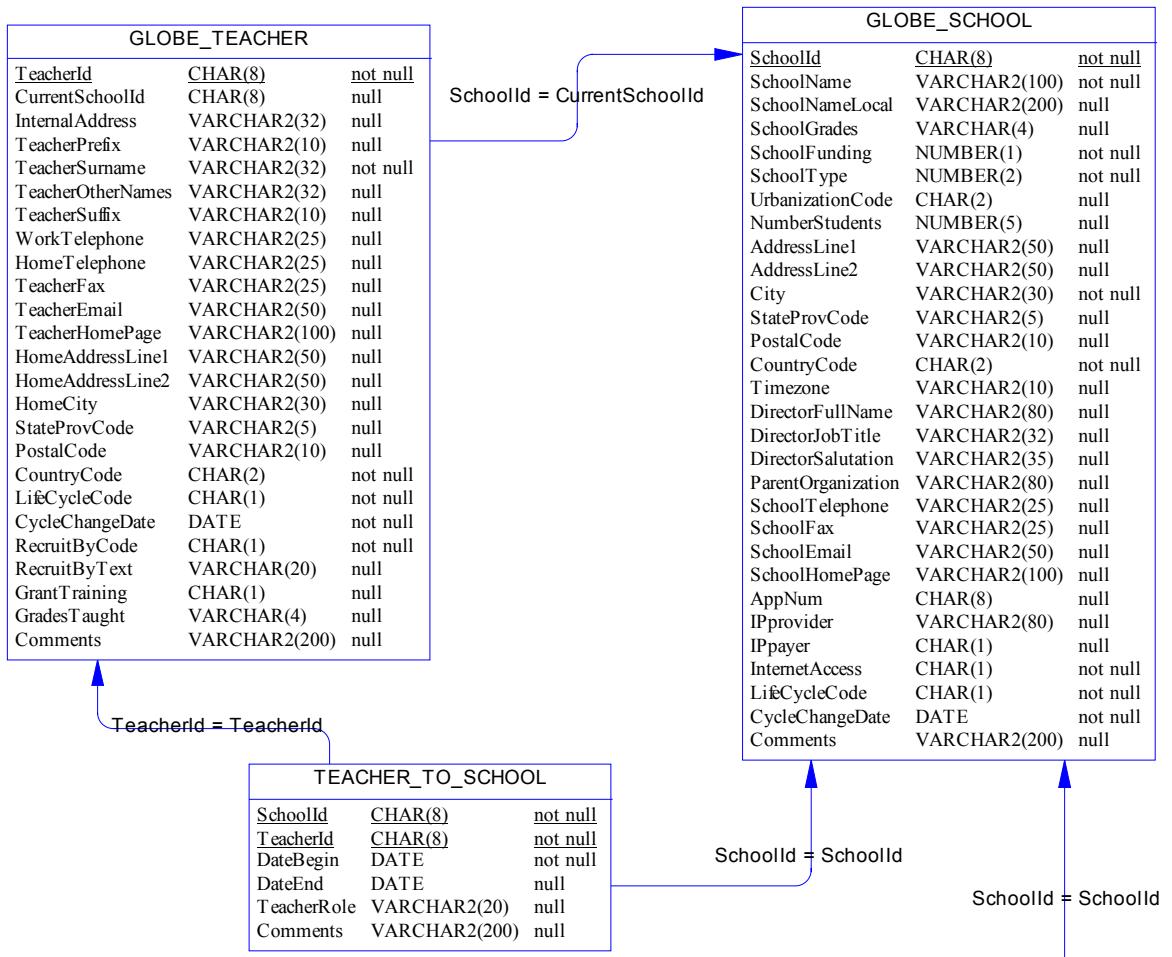
August 7, 2002

Table of contents

1 Diagram of Architecture Main.....	6
2 Diagram of Atmosphere.....	8
3 Diagram of Atmosphere and Soil Digital.....	14
4 Diagram of Biology.....	16
5 Diagram of Campaigns and Coordinations.....	20
6 Diagram of Checklist Views.....	22
7 Diagram of Contact Management.....	24
8 Diagram of Country State Prov Info.....	26
9 Diagram of Daily Counts.....	28
10 Diagram of Dixon Summary.....	30
11 Diagram of Evaluations.....	32
12 Diagram of FSL Miscellaneous Tables.....	34
13 Diagram of Fire Fuel Ecology.....	36
14 Diagram of Franchises Partners Affiliates.....	40
15 Diagram of GLOBE Database Users.....	42
16 Diagram of GPS Metadata.....	44
17 Diagram of Geographic Regions.....	46
18 Diagram of Haze Humidity Ozone.....	48
19 Diagram of Honor Roll.....	52
20 Diagram of Honor Roll AdvAtmos.....	64
21 Diagram of Honor Roll Earth System.....	66
22 Diagram of Honor Roll Letters.....	70
23 Diagram of Honor Roll Pan GLOBE.....	76
24 Diagram of Hummingbird.....	80
25 Diagram of Investigations.....	84
26 Diagram of Learning Standards.....	86
27 Diagram of LifeCycleRegistration Codes.....	88
28 Diagram of Mail Pals.....	90
29 Diagram of Mailing Status.....	92
30 Diagram of Misc Code Tables.....	94
31 Diagram of NWS Reference Data.....	96
32 Diagram of OrderInventory.....	98
33 Diagram of Phenology Budburst.....	100
34 Diagram of Phenology Garden.....	106
35 Diagram of Phenology Greening.....	108
36 Diagram of Phenology Lilacs.....	114
37 Diagram of Protocol Measurement Count.....	118
38 Diagram of School Information.....	120
39 Diagram of School To School.....	122
40 Diagram of Site Metadata.....	124
41 Diagram of Site Photographs.....	128
42 Diagram of Soil Characteristics.....	132
43 Diagram of Soil Infiltration.....	136
44 Diagram of Soil Moisture.....	140
45 Diagram of Soil Temperature.....	144
46 Diagram of Surface Water.....	148
47 Diagram of TM Image Information.....	152
48 Diagram of Teacher PreService.....	154
49 Diagram of Teacher Training.....	156
50 Diagram of Teacher and School Views.....	158
51 Diagram of Trainer Information.....	160

Physical Data Model	GLOBE Data Architecture
52 Diagram of Trainer Training.....	162
53 Diagram of US Partners.....	164
54 Diagram of Workshop Registration (Future).....	166
55 Diagram of Zip Information.....	168

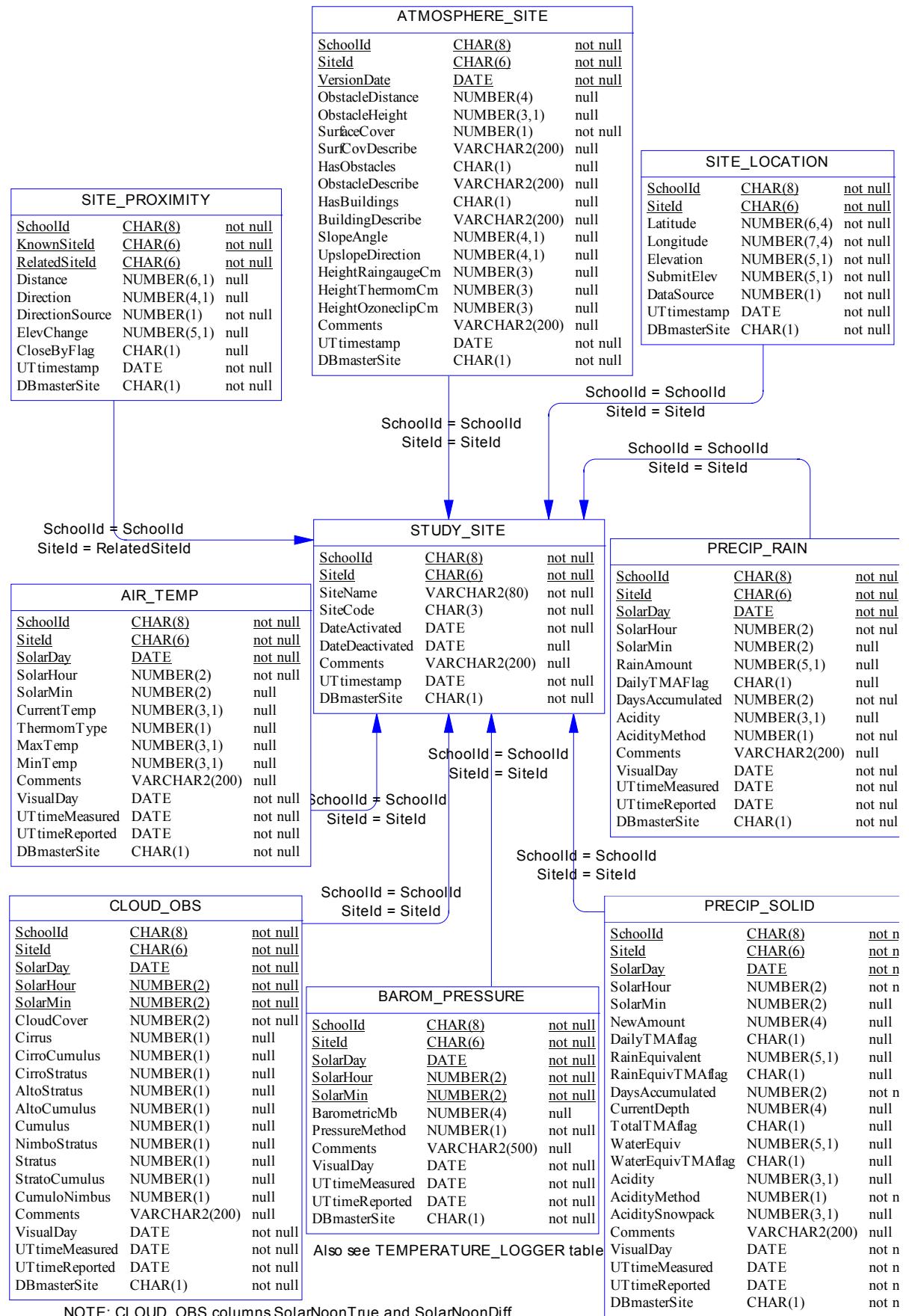
1 Diagram of Architecture _ Main

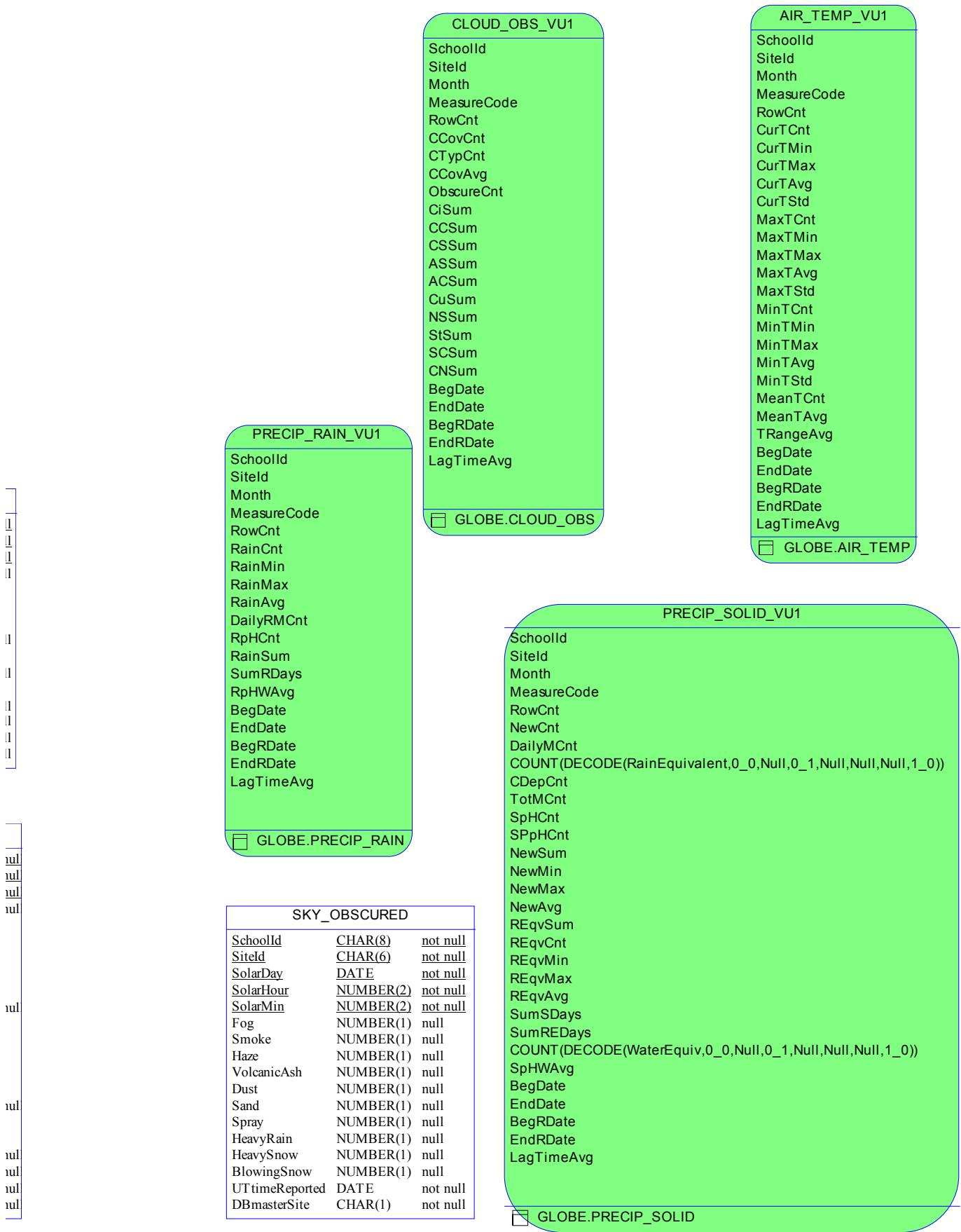


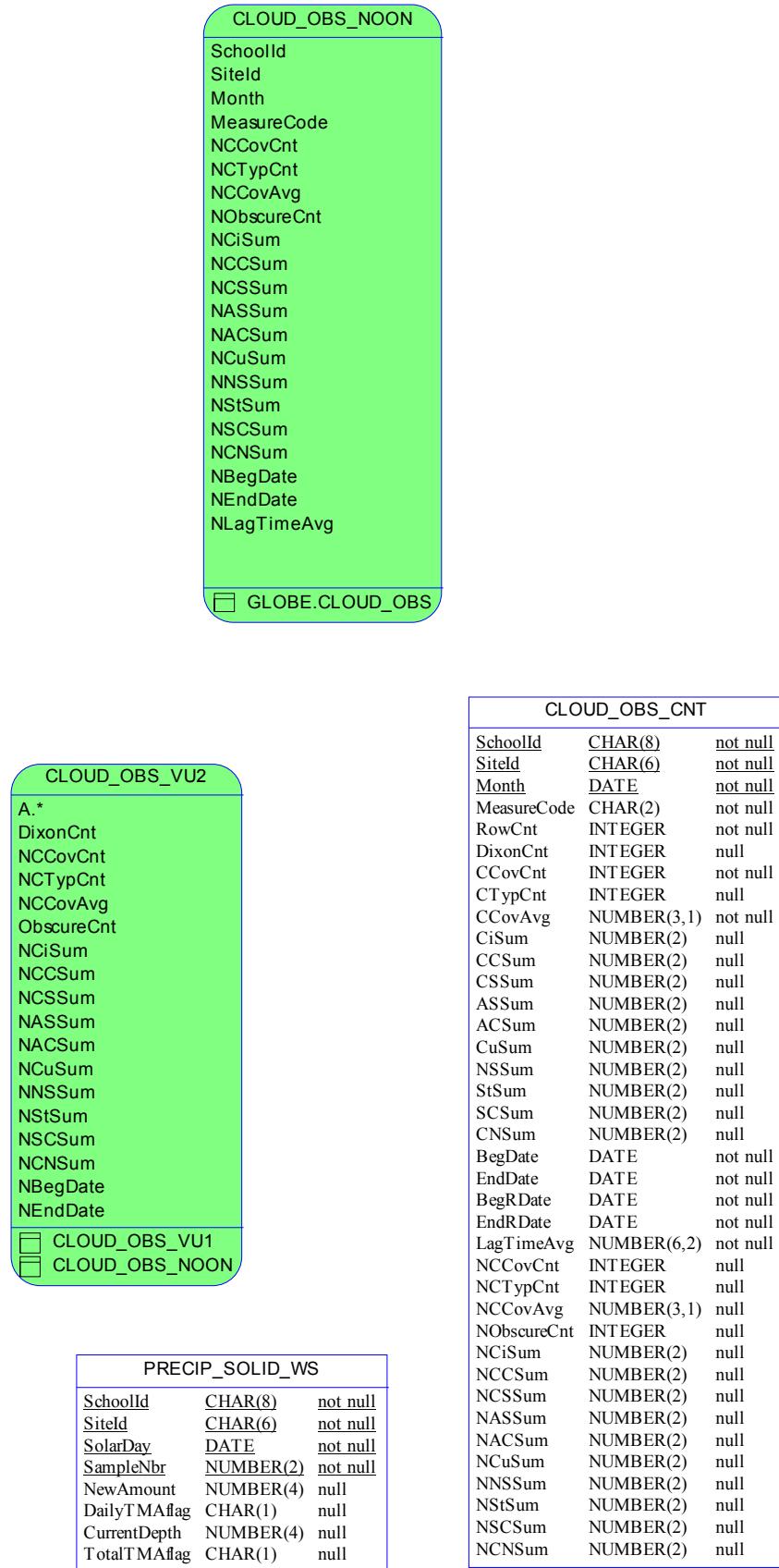
Recently (Oct 2001) GLOBE has been re-considering the notion of a "lead teacher" for a school. The main goal of this notion would be to have a single point of contact between GLOBE and that school thereby reducing the amount of mailing and email traffic to each teacher. Dixon has asked that we go ahead to support this concept on a "voluntary" basis. A school would not be forced to operate in this manner.

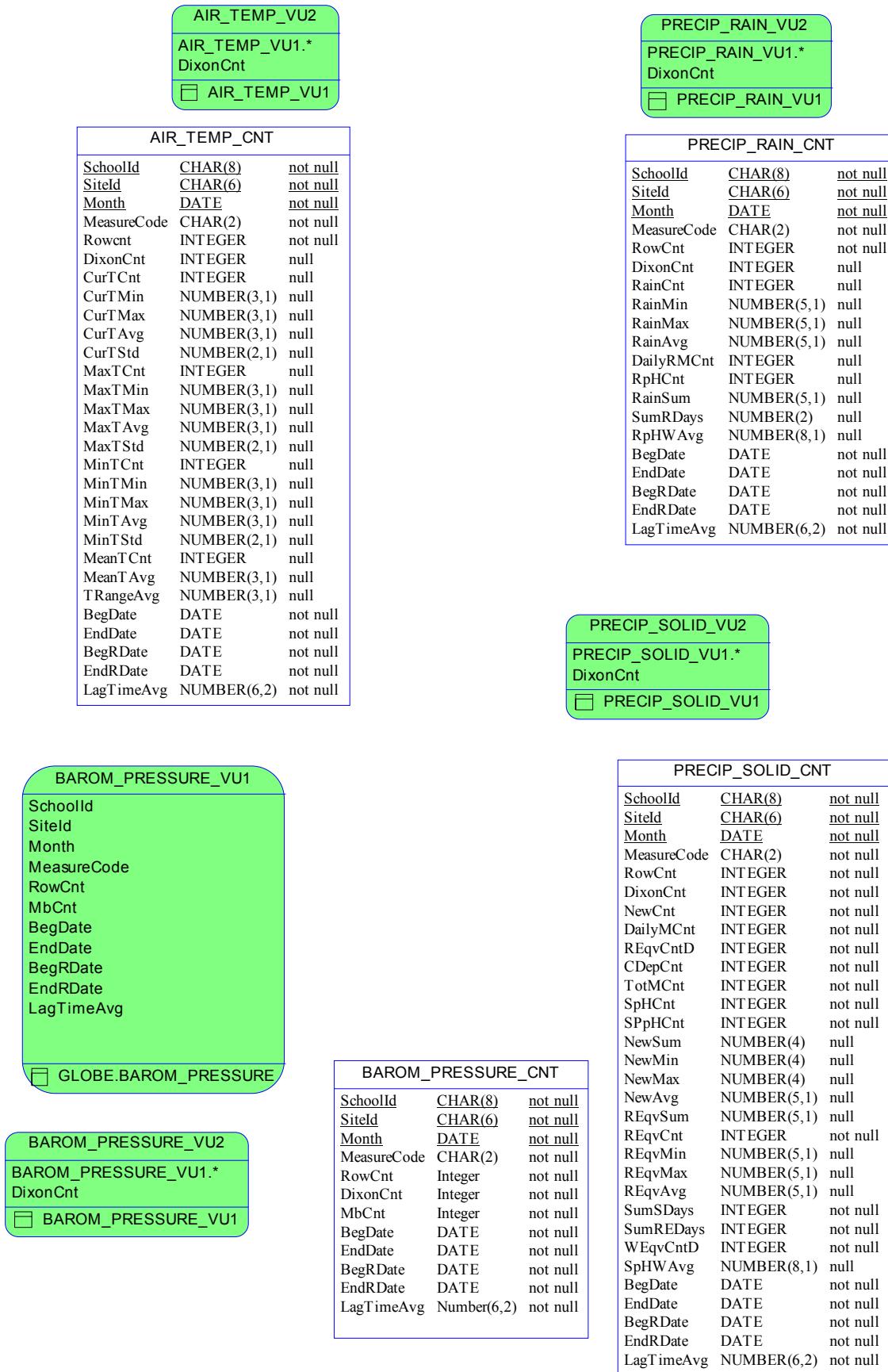
Email between Mike and Len (10/3/01) suggests that the "lead teacher" is really an attribute of a school and a teacher pair, not an individual teacher, thus a new attribute on **TEACHER_TO_SCHOOL** might be the best way to capture this concept. Discussion continues!!

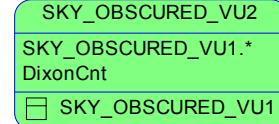
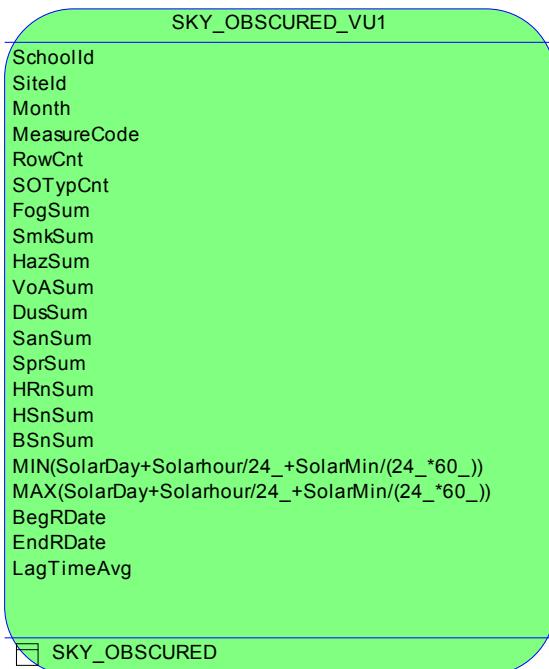
2 Diagram of Atmosphere











SKY_OBSCURED_CNT

SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	Integer	not null
DixonCnt	Integer	not null
SOTypCnt	Integer	not null
FogSum	Integer	null
SmkSum	Integer	null
HazSum	Integer	null
VoASum	Integer	null
DusSum	Integer	null
SanSum	Integer	null
SprSum	Integer	null
HRnSum	Integer	null
BSnSum	Integer	null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	not null
EndRDate	DATE	not null
LagTimeAvg	Number(6,2)	not null

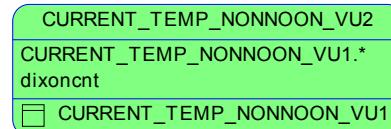
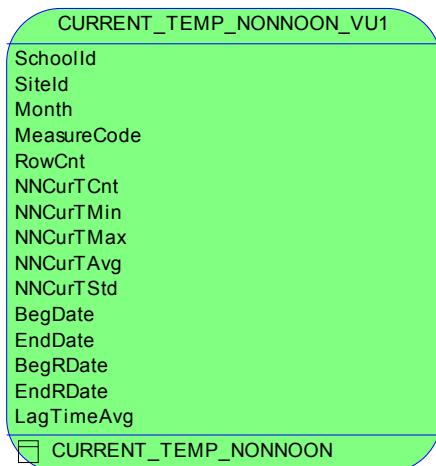
CURRENT_TEMP_NONNOON

SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null
SolarDay	DATE	not null
SolarHour	NUMBER(2)	not null
SolarMin	NUMBER(2)	not null
CurrentTemp	NUMBER(3,1)	null
ThermomType	NUMBER(1)	null
Comments	VARCHAR2(200)	null
VisualDay	DATE	null
UTtimeMeasured	DATE	not null
UTtimeReported	DATE	not null
DBmasterSite	CHAR(1)	not null

TEMP_EXTREMES

Country	CHAR(2)	not null
StateProv	VARCHAR2(5)	not null
Month	DATE	not null
MaxTemp	NUMBER(3,1)	null
MinTemp	NUMBER(3,1)	null

The Month is a Date value truncated to the first day of the month in the most recent year in which the Max and Min temp values are known records. This date may lag by a year or more the dates of current readings. If StateProv=Country then the reading is for the country.

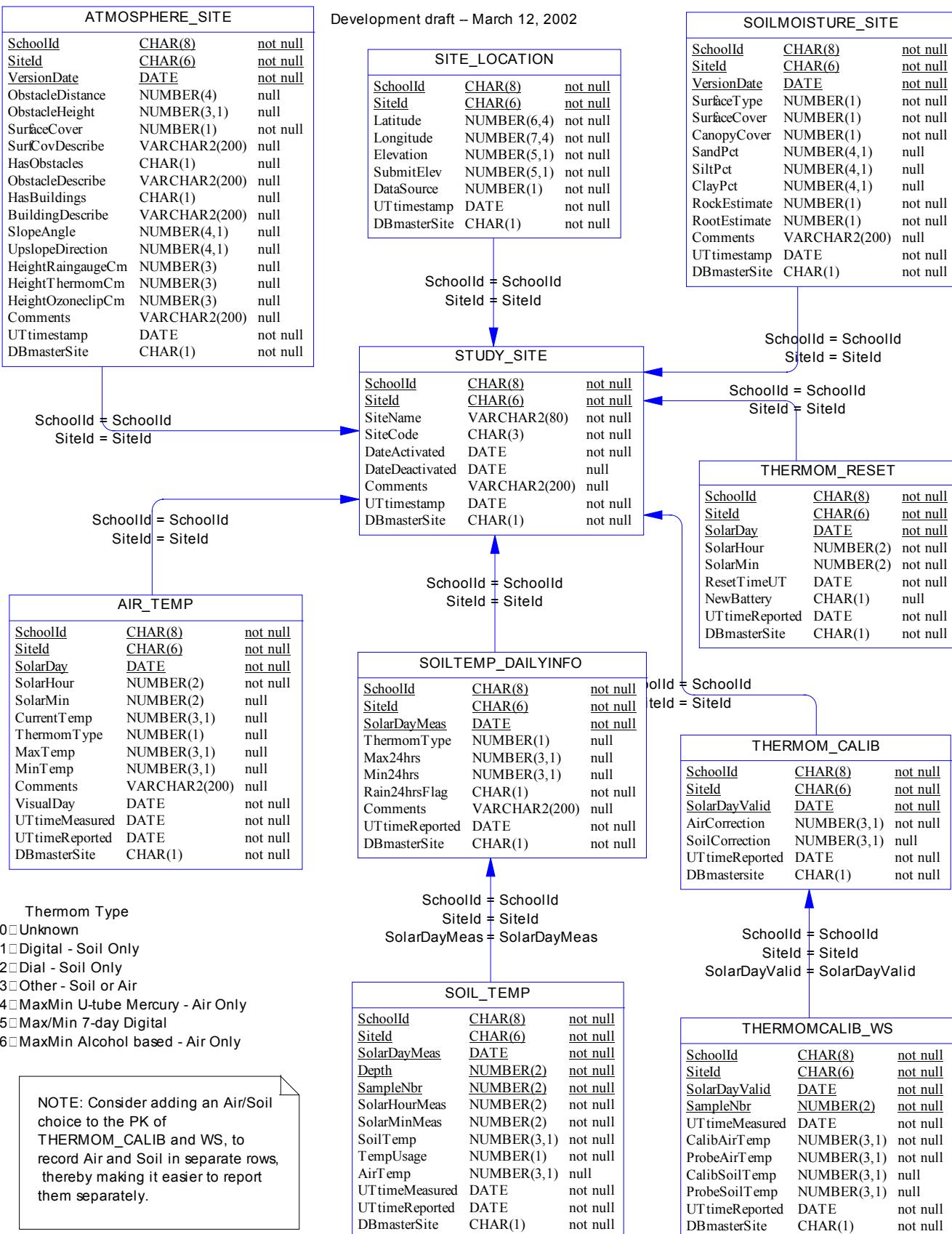


3 Diagram of Atmosphere and Soil_Digital

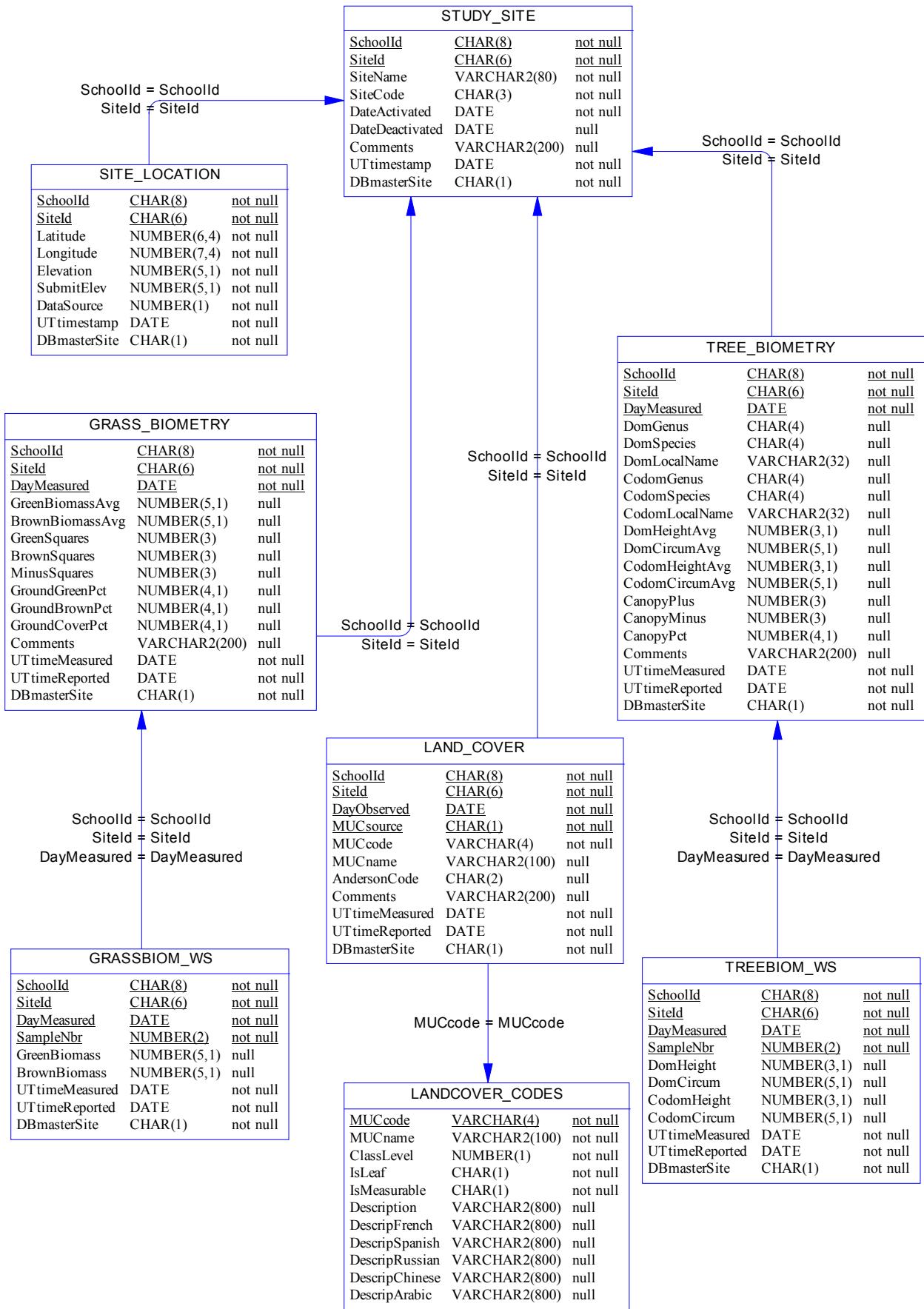
Physical Data Model

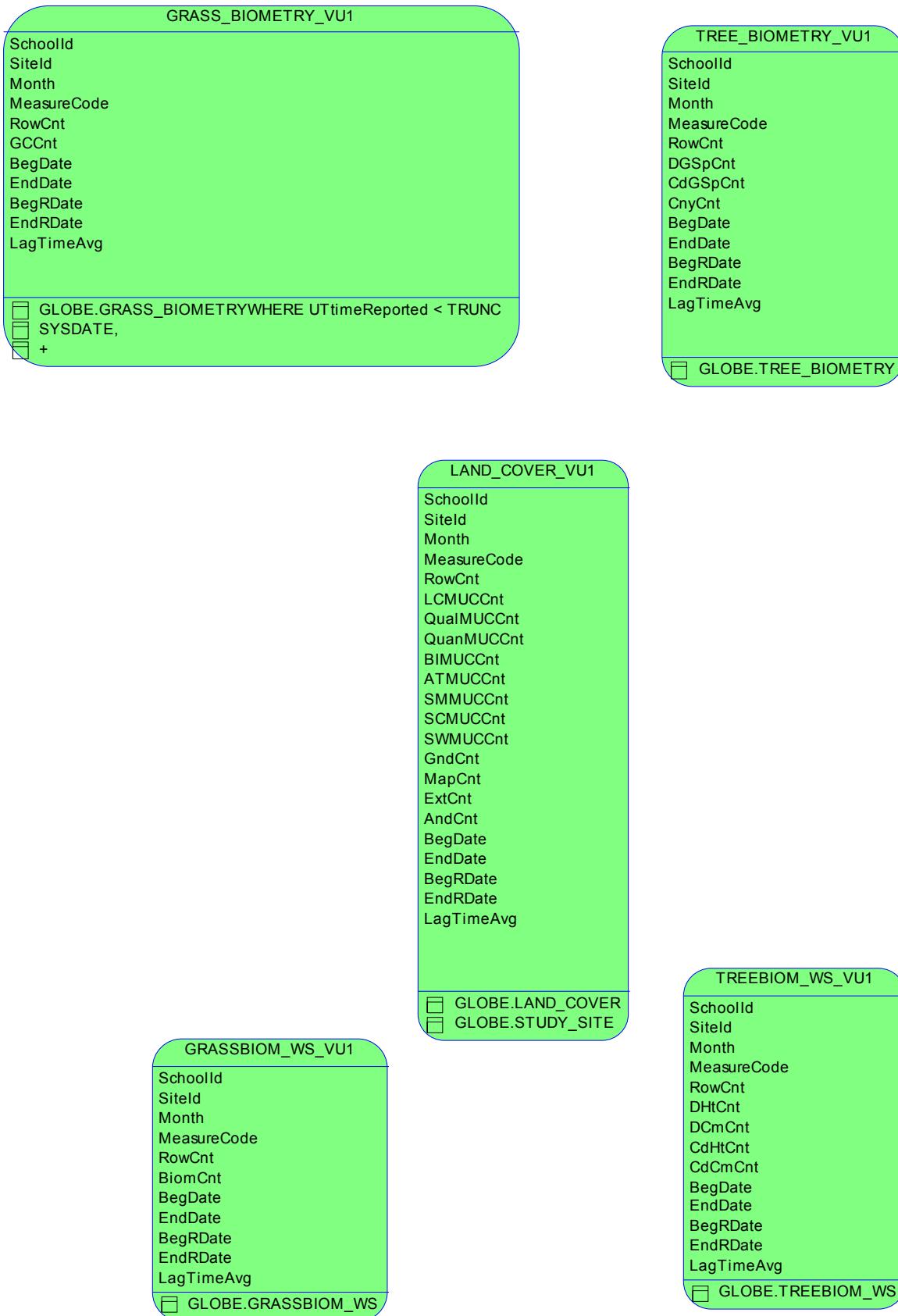
GLOBE Data Architecture

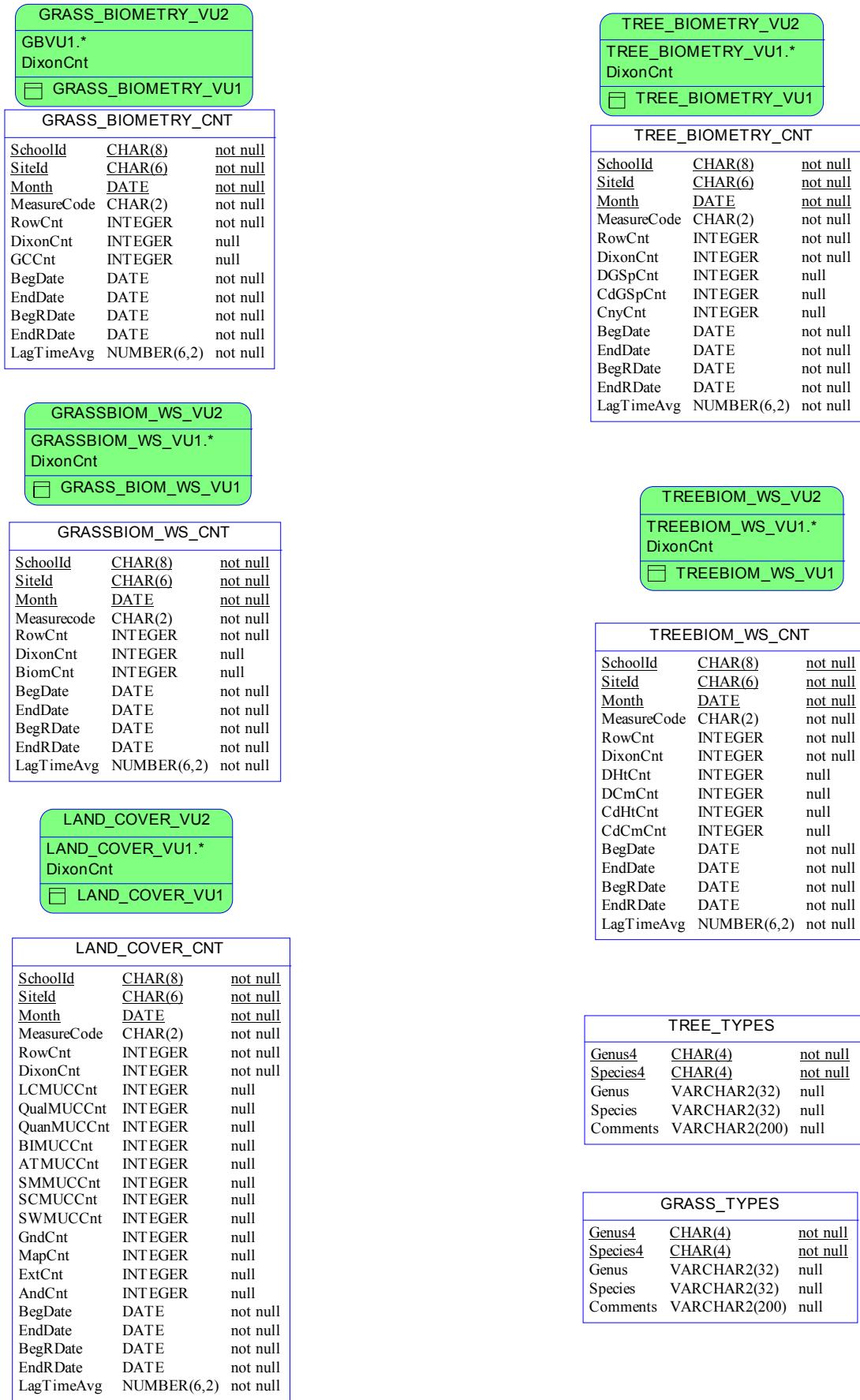
Air and Soil Temperature
Digital Thermometer Probes



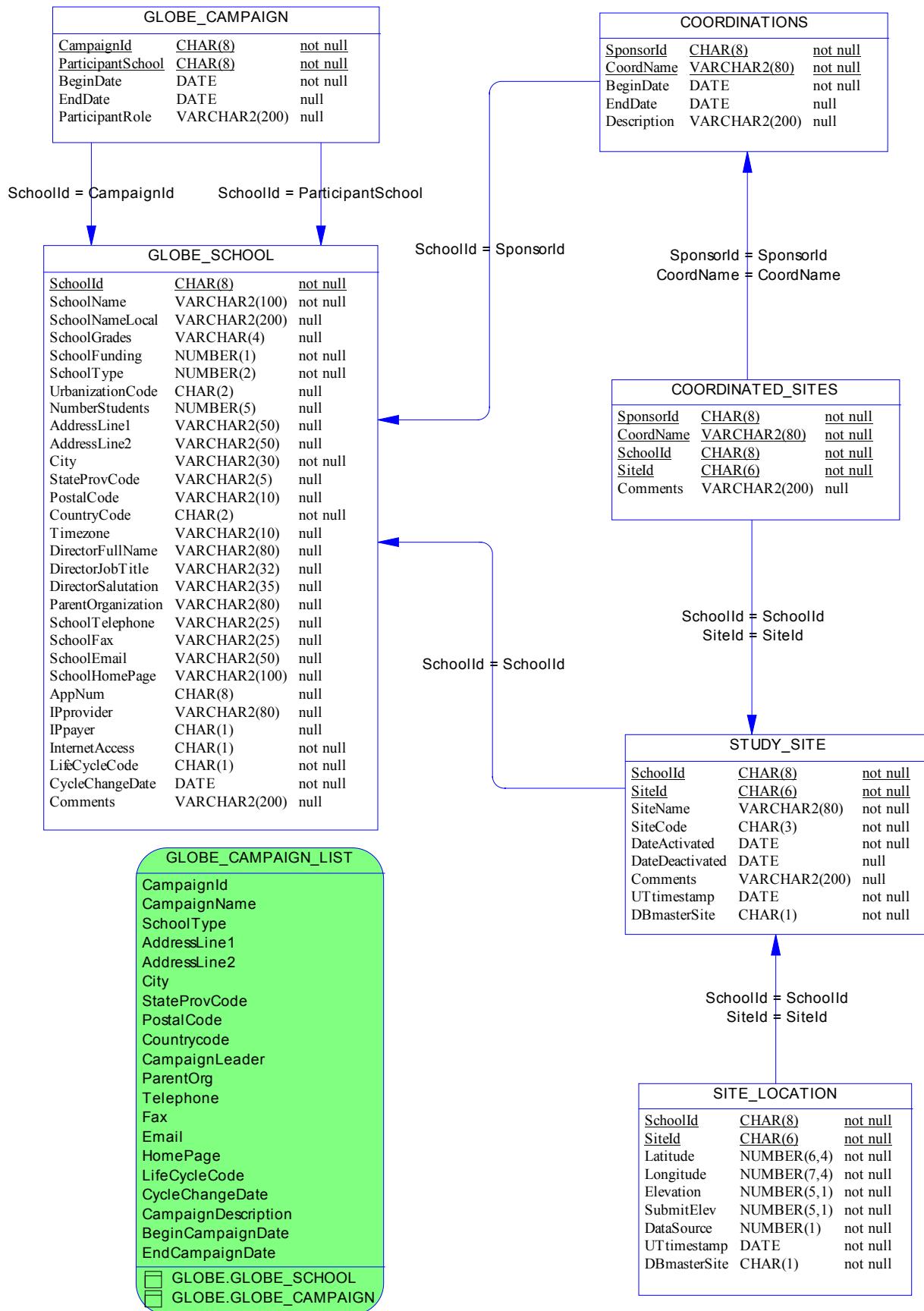
4 Diagram of Biology



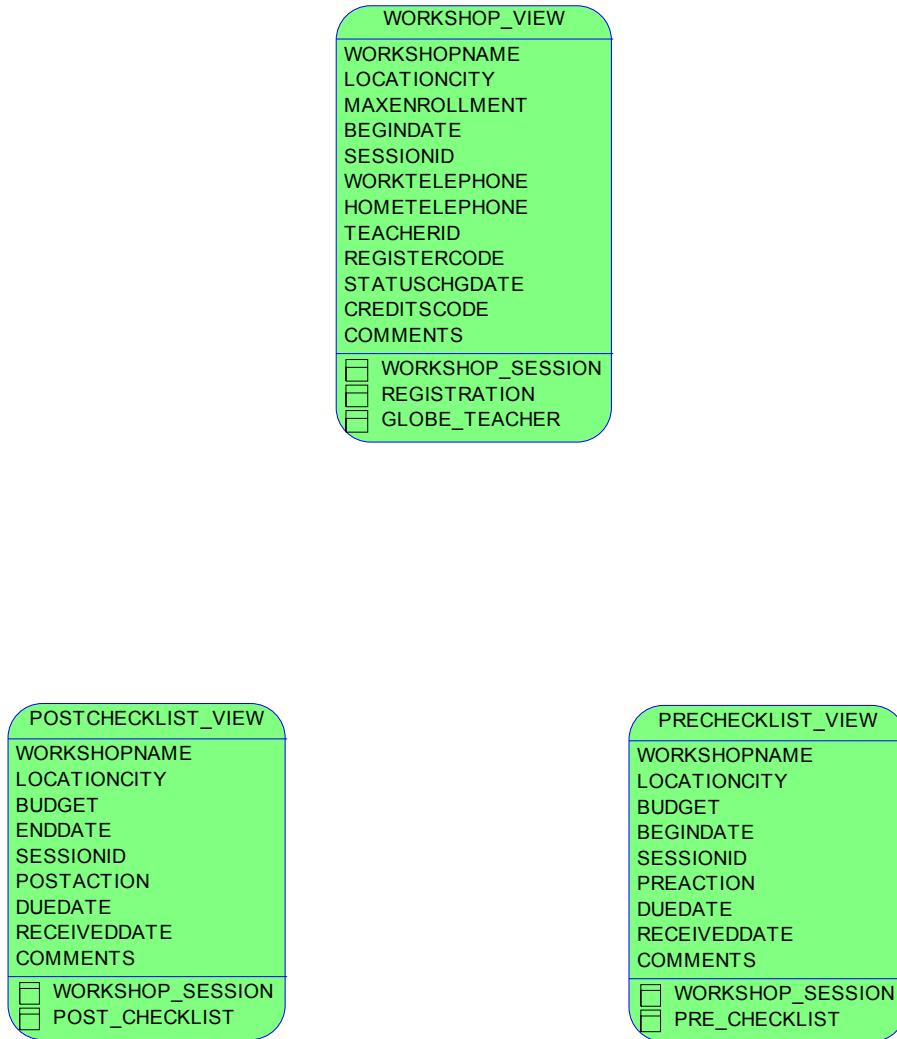




5 Diagram of Campaigns and Coordinations

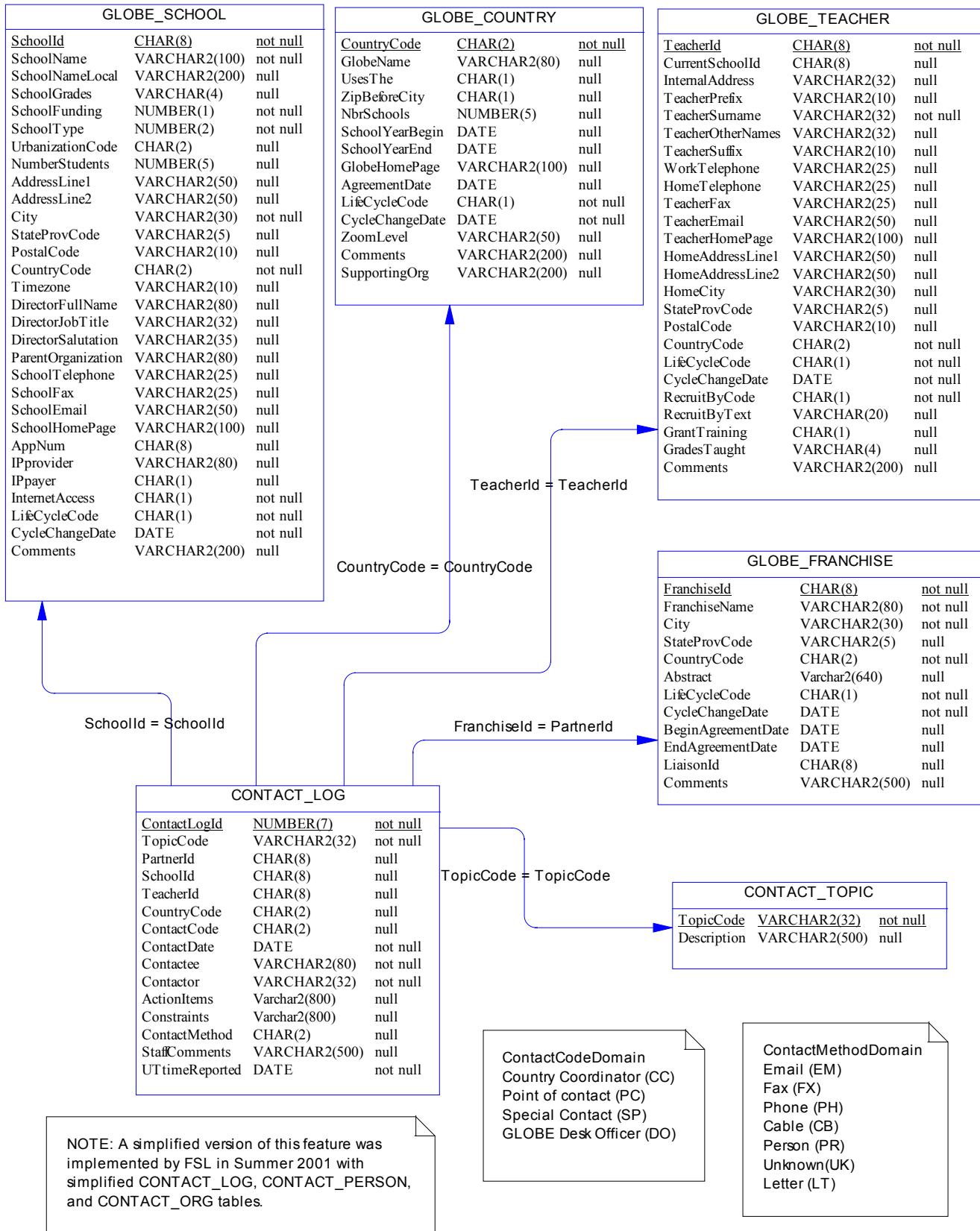


6 Diagram of Checklist Views

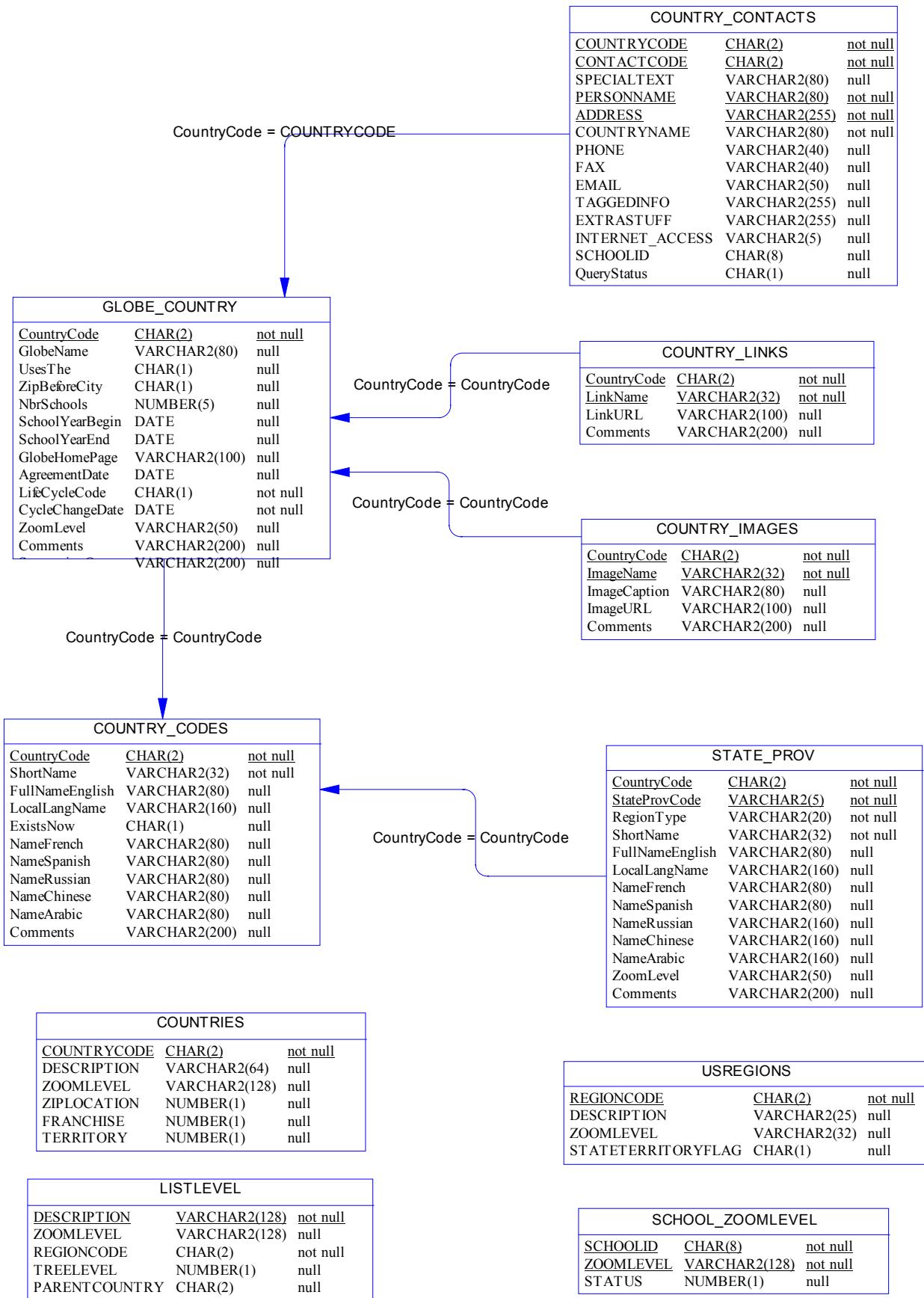


7 Diagram of Contact Management

Contact Management
draft – Spring 2001



8 Diagram of Country State_Prov Info



9 Diagram of Daily Counts

The Daily Counts sub-model has recently been significantly re-structured.

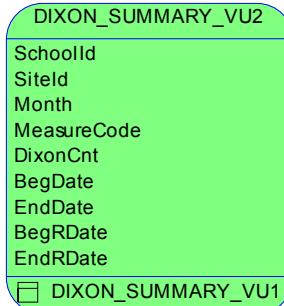
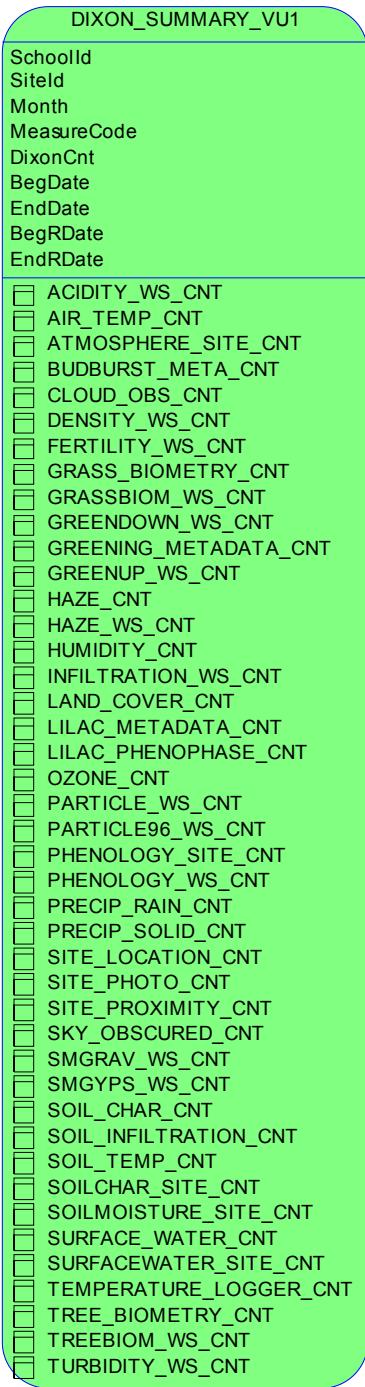
The NGDC "How Many Data Are There?" web page is now defined in terms of the DAILY_UPDATE_CNT snapshot.

DAILY_UPDATE_CNT is defined in terms of DIXON_SUMMARY_CNT and DIXON_SUMMARY_MC and many daily <measurecode>_CNT objects.

DATA_ACTIVITY		
SchoolId	CHAR(8)	not null
SiteId	CHAR(6)	not null
MeasureCode	CHAR(2)	not null
TableType	CHAR(2)	not null
TableName	VARCHAR2(18)	not null
DatabaseAction	CHAR(1)	not null
UTtimeMeasured	DATE	not null
UTtimeReported	DATE	not null
ClientType	CHAR(2)	not null
DBmasterSite	CHAR(1)	not null

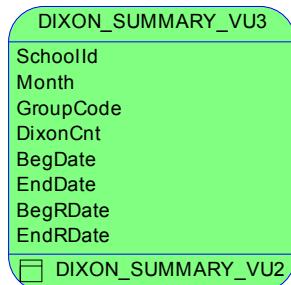
ADMIN_ACTIVITY		
<u>Id</u>	Varchar2(20)	not null
TableName	Varchar2(18)	null
DateModified	DATE	not null
ColumnName	Varchar2(18)	not null
DatabaseAction	CHAR(1)	null
<u>UserId</u>	Varchar2(10)	not null

10 Diagram of Dixon Summary

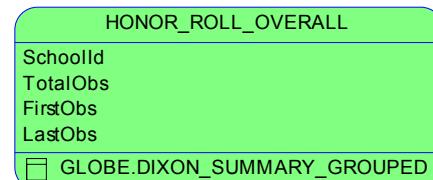


DIXON_SUMMARY_VU1 is the UNION ALL of all of the DixonCnt's from the relevant _CNT tables, including extra metadata counts from LAND_COVER_CNT and SITE_PHOTO_CNT.

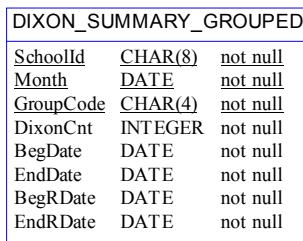
DIXON_SUMMARY_VU2 groups by the first four columns of DIXON_SUMMARY_VU1.



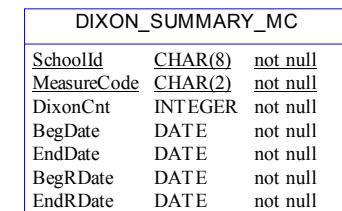
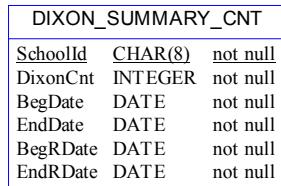
DIXON_SUMMARY_VU3 groups by SchoolId, Month, and MeasureCodes clustered in something close to Investigations, then sums over DixonCnt to get a new dixonCnt.



A summation over DIXON_SUMMARY_GROUPED over all time, grouped just by SchoolId. Should execute fast enough to not require a snapshot definition.

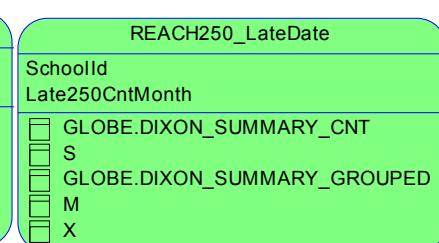
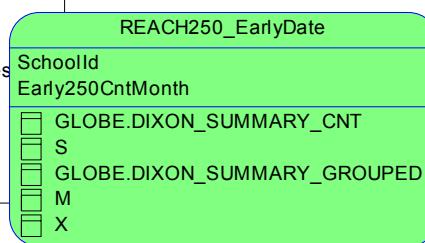
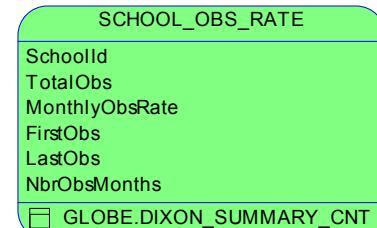


A daily refreshed snapshot of DIXON_SUMMARY_VU3. Refreshed close to 23:50 UT time after all _CNT tables are refreshed.



Dixon_Summary_MC is a snapshot table defined over Dixon_Summary_VU2 and grouped over SchoolId and MeasureCode.

Dixon_Summary_CNT is a snapshot table defined over Dixon_Summary_VU2 and grouped over just SchoolId.



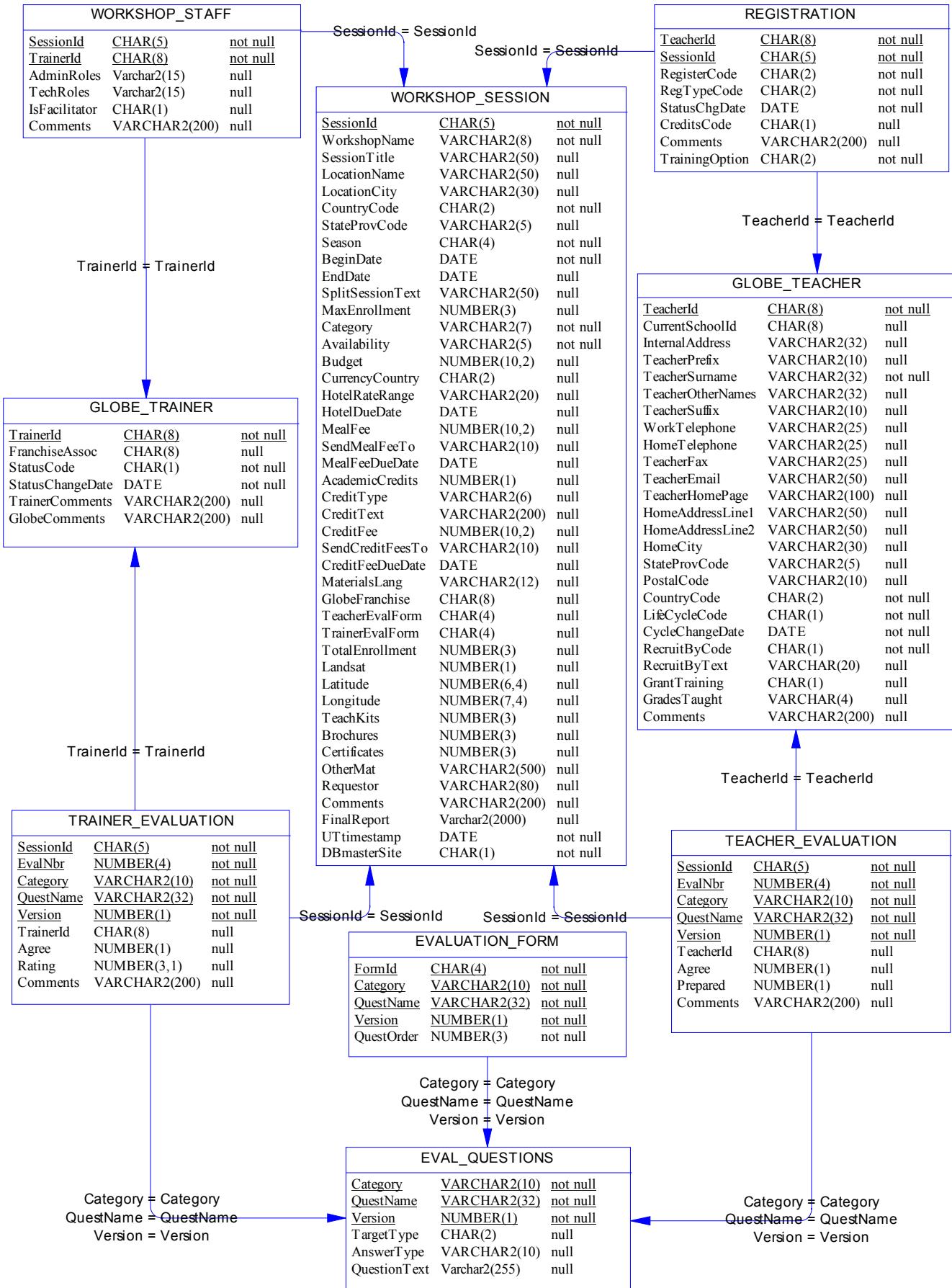
CAUTION!!

In all of the views or snapshots, users must be very careful not to mis-use the BegRDate and EndRDate. Grouping is done by MeasurementDay NOT by ReportDate, so except in the final DIXON_SUMMARY_MC and DIXON_SUMMARY_CNT, these RDates are subject to mis-use.

11 Diagram of Evaluations

Physical Data Model

GLOBE Data Architecture



12 Diagram of FSL Miscellaneous Tables

BULLETINS		
<u>DATESUBMITTED</u>	<u>DATE</u>	<u>not null</u>
TITLE	VARCHAR2(128)	null
BODY	Varchar2(2000)	null
WELCOMEPAGETITLE	VARCHAR2(30)	null

MESSAGELOG		
<u>RECEIVERID</u>	<u>VARCHAR2(12)</u>	<u>not null</u>
<u>DATESENT</u>	<u>DATE</u>	<u>not null</u>
SENDERID	VARCHAR2(12)	not null
MESSAGEREAD	NUMBER(1)	null
SUBJECT	VARCHAR2(64)	null
MESSAGE	LONG	null
SPECIFICTO	VARCHAR2(64)	null
SPECIFICFROM	VARCHAR2(64)	null
DATETODELETE	DATE	null

GLOBE_STARS		
<u>SUBMISSIONNUMBER</u>	<u>NUMBER(3)</u>	<u>not null</u>
DateSubmitted	DATE	null
FILENAME	VARCHAR2(16)	not null
TITLE	VARCHAR2(128)	not null
CountryCode	VARCHAR2(2)	null
STATEPROVCODE	VARCHAR2(5)	null
SCHOOLID	VARCHAR2(8)	null
REDIRECT	CHAR(1)	null

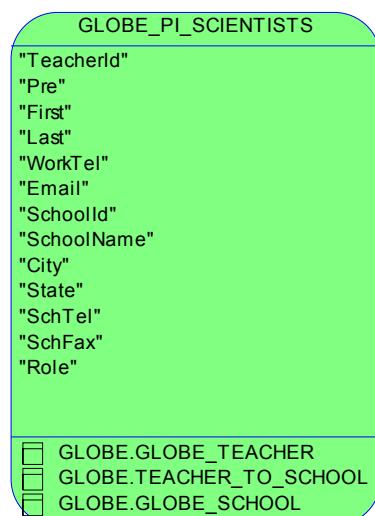
ARCHIVEMESSAGELOG		
<u>RECEIVERID</u>	<u>VARCHAR2(12)</u>	<u>not null</u>
<u>DATESENT</u>	<u>DATE</u>	<u>not null</u>
SENDERID	VARCHAR2(12)	not null
SUBJECT	VARCHAR2(64)	null
MESSAGE	LONG	null
SPECIFICTO	VARCHAR2(64)	null
SPECIFICFROM	VARCHAR2(64)	null

MASSMAIL		
RECIPIENTGROUP	VARCHAR2(4)	not null
DATESENT	DATE	not null
SENDERID	CHAR(8)	not null
SUBJECT	VARCHAR2(64)	not null
SPECIFICTO	VARCHAR2(64)	null
SPECIFICFROM	VARCHAR2(64)	null
MESSAGE	VARCHAR2(2000)	null
DATETODELETE	DATE	null

DATA_ENTRY_OPTIONS		
<u>PARAMNAME</u>	<u>VARCHAR2(20)</u>	<u>not null</u>
<u>LANGUAGE</u>	<u>CHAR(2)</u>	<u>not null</u>
<u>CODEVALUE</u>	<u>VARCHAR2(3)</u>	<u>not null</u>
DESCRIPTION	VARCHAR2(60)	not null
PROTOCOL	VARCHAR2(25)	not null
DATEDEACTIVATED	DATE	null
COMMENTS	VARCHAR2(200)	null

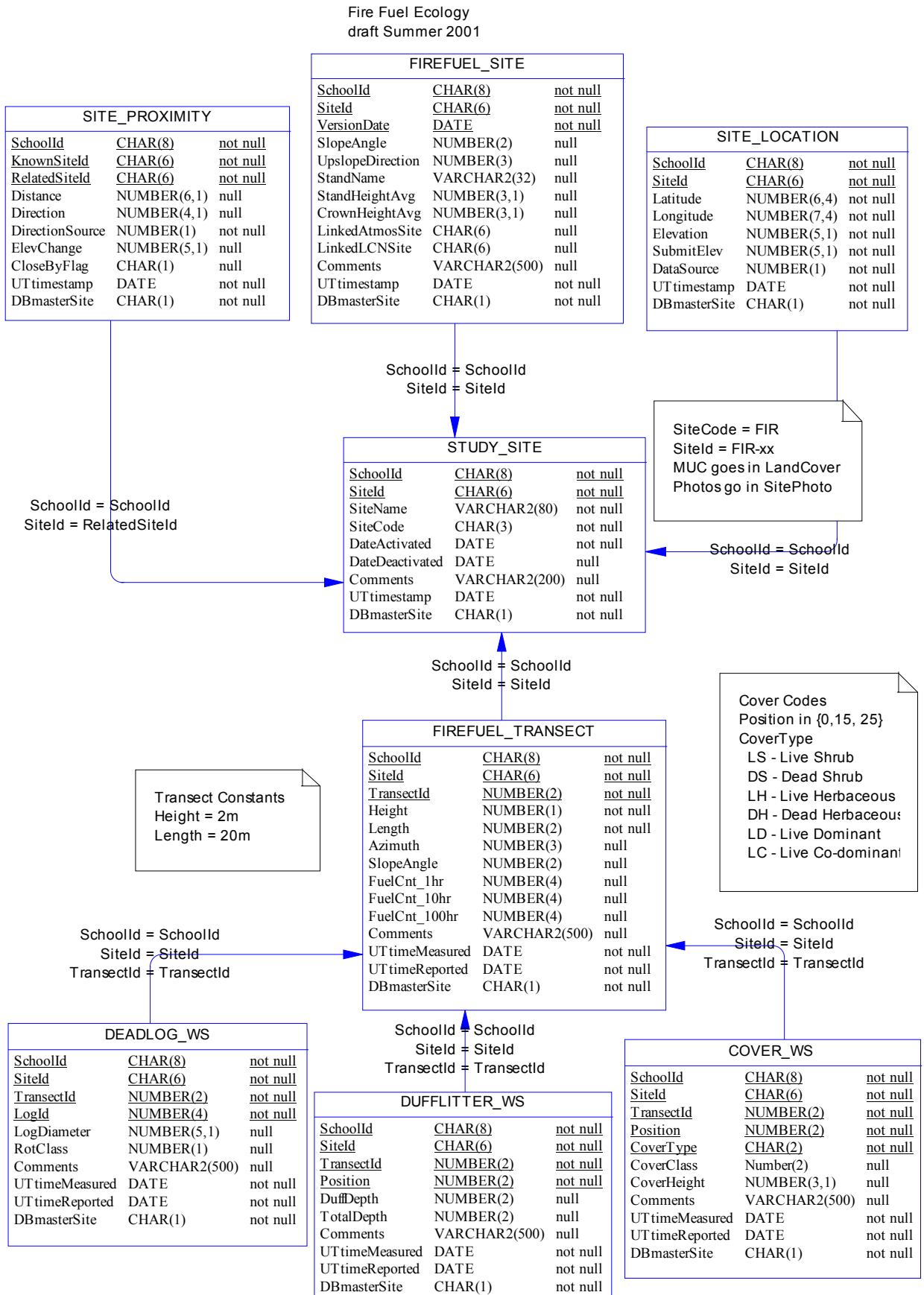
LISTLEVEL		
<u>DESCRIPTION</u>	<u>VARCHAR2(128)</u>	<u>not null</u>
ZOOMLEVEL	VARCHAR2(128)	null
REGIONCODE	CHAR(2)	not null
TREELEVEL	NUMBER(1)	null
PARENTCOUNTRY	CHAR(2)	null

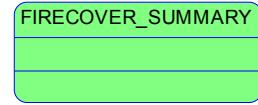
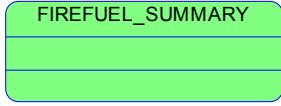
SCHOOL_ZOOMLEVEL		
SCHOOLID	CHAR(8)	not null
ZOOMLEVEL	VARCHAR2(128)	not null
STATUS	NUMBER(1)	null



T2T_MESSAGE		
<u>MESSAGEID</u>	<u>CHAR(4)</u>	<u>not null</u>
<u>DBMASTERSITE</u>	<u>CHAR(1)</u>	<u>not null</u>
SCHOOLID	CHAR(8)	null
TEACHERID	CHAR(8)	null
TEACHERNAME	VARCHAR2(80)	null
DATESUBMITTED	DATE	null
CATEGORY	NUMBER(2)	not null
TEACHEREMAIL	VARCHAR2(50)	not null
SUBJECT	VARCHAR2(64)	not null
URL	VARCHAR2(256)	null
MESSAGE	VARCHAR2(2000)	not null

13 Diagram of Fire Fuel Ecology



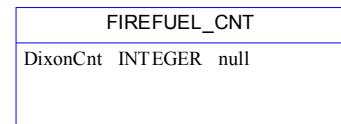
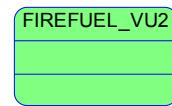
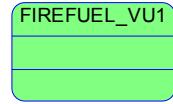


The FIREFUEL_SUMMARY view will be a join of the STUDY_SITE, SITE_LOCATION, FIREFUEL_SITE, LAND_COVER, FUEL_WS, DUFFLITTER_WS, TREE_BIOMETRY, and GRASS_BIOMETRY tables to present a summary of "Fire Fuel" information for each SiteId.

The assumption is that the VersionDate of the FIREFUEL_SITE table is the SolarDay on which all of the measurements were taken!

The FIREFUEL_SUMMARY view will be a join of the STUDY_SITE, SITE_LOCATION, FIREFUEL_SITE, LAND_COVER, COVER_WS, TREE_BIOMETRY, and GRASS_BIOMETRY tables to present a summary of "Canopy Cover" information for each SiteId.

The assumption is that the VersionDate of the FIREFUEL_SITE table is the SolarDay on which all of the measurements were taken!



These _VU1 and _VU2 views, and the _CNT snapshot, will be used to calculate the DixonCnt for the Fire Fuel Ecology protocol measurements.

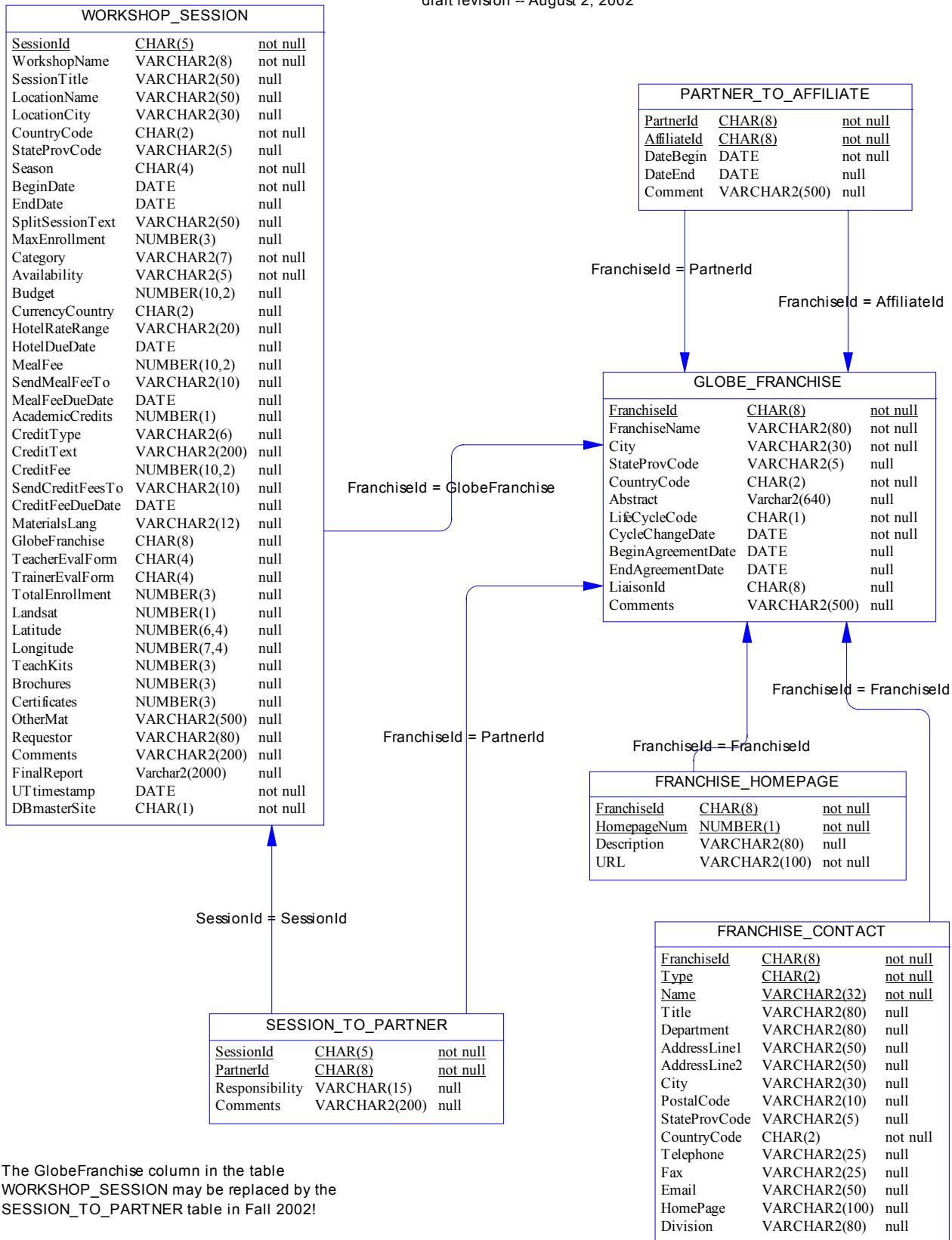
They will then be added in the appropriate way to the DIXON_SUMMARY_VU1 view so that the DIXON_SUMMARY_GROUPED and DIXON_SUMMARY_MC snapshots properly reflect student efforts in this new protocol.

The MeasureCode to be used for this summary will be "FF"!! Is this OK with everyone?

14 Diagram of Franchises Partners Affiliates

Franchises Partners Affiliates

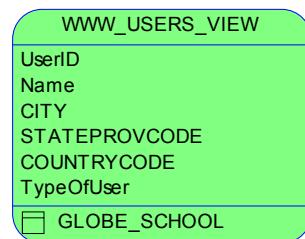
draft revision -- August 2, 2002



The GlobeFranchise column in the table
WORKSHOP_SESSION may be replaced by the
SESSION_TO_PARTNER table in Fall 2002!

15 Diagram of GLOBE Database Users

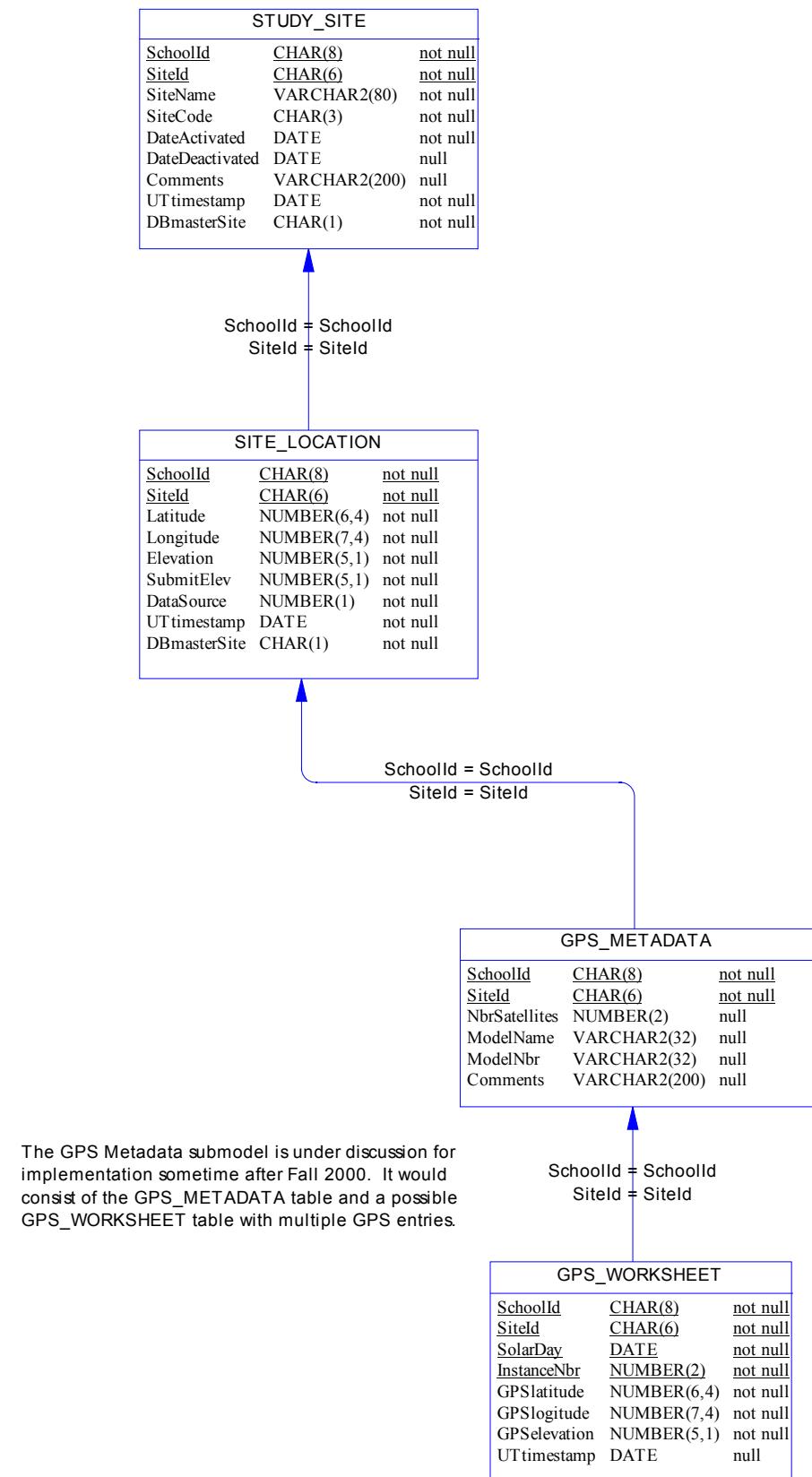
GLOBEDB_USERS		
USERID	VARCHAR2(8)	null
NAME	VARCHAR2(32)	null
TELEPHONE	VARCHAR2(20)	null
EMAIL	VARCHAR2(50)	null
OFFICE	VARCHAR2(10)	null
COMMENTS	VARCHAR2(200)	null



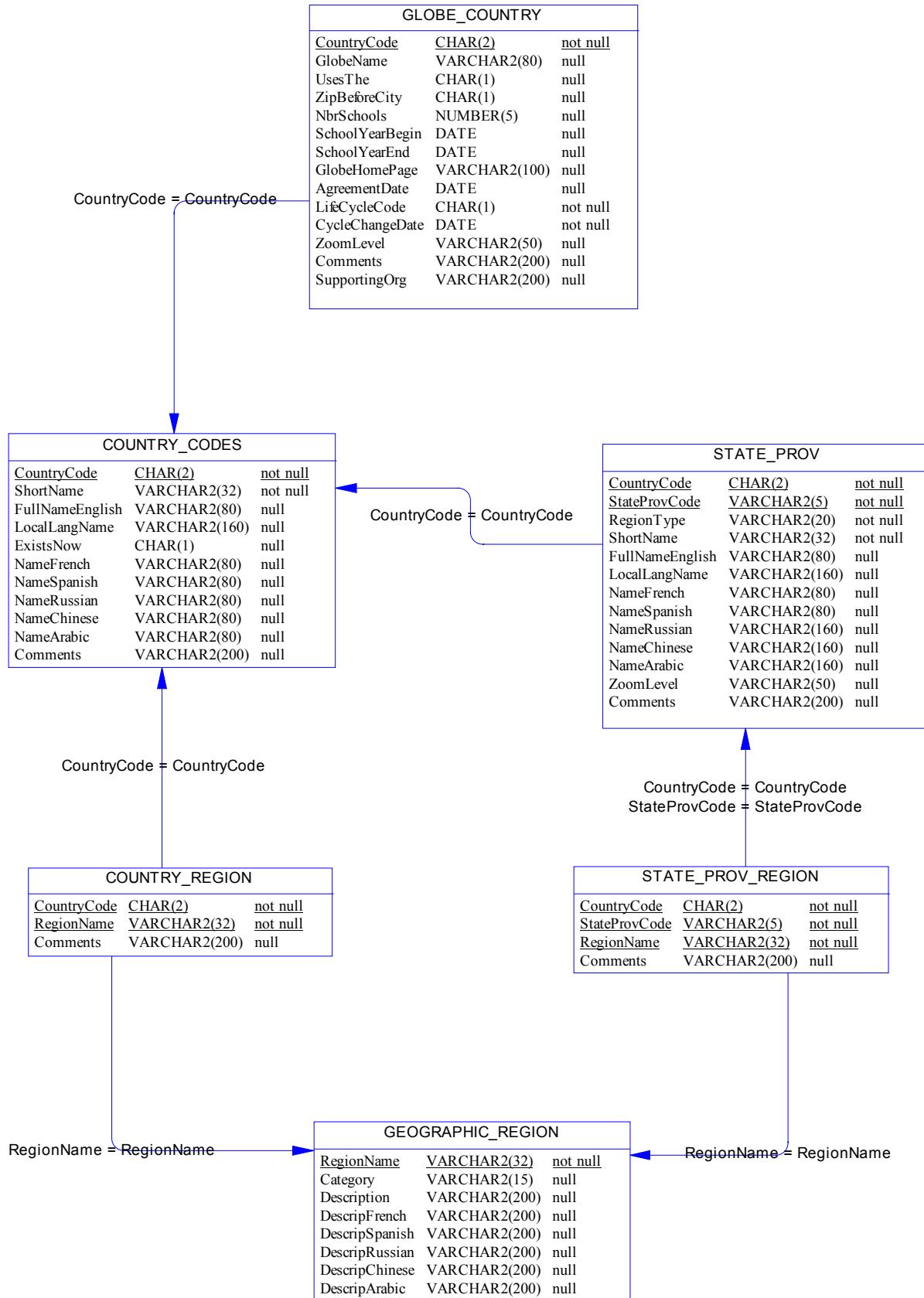
WWW_USERS		
USERID	CHAR(8)	null
NAME	VARCHAR2(100)	null
CITY	VARCHAR2(35)	null
STATEPROVCODE	VARCHAR2(5)	null
COUNTRYCODE	CHAR(2)	null
TYPEOFUSER	VARCHAR2(9)	null

DB_MASTER_SITES		
DBmasterSite	CHAR(1)	not null
Global_Name	VARCHAR2(32)	not null
Location	VARCHAR2(32)	not null
Cycle	CHAR(4)	null

16 Diagram of GPS Metadata



17 Diagram of Geographic Regions



18 Diagram of Haze Humidity Ozone

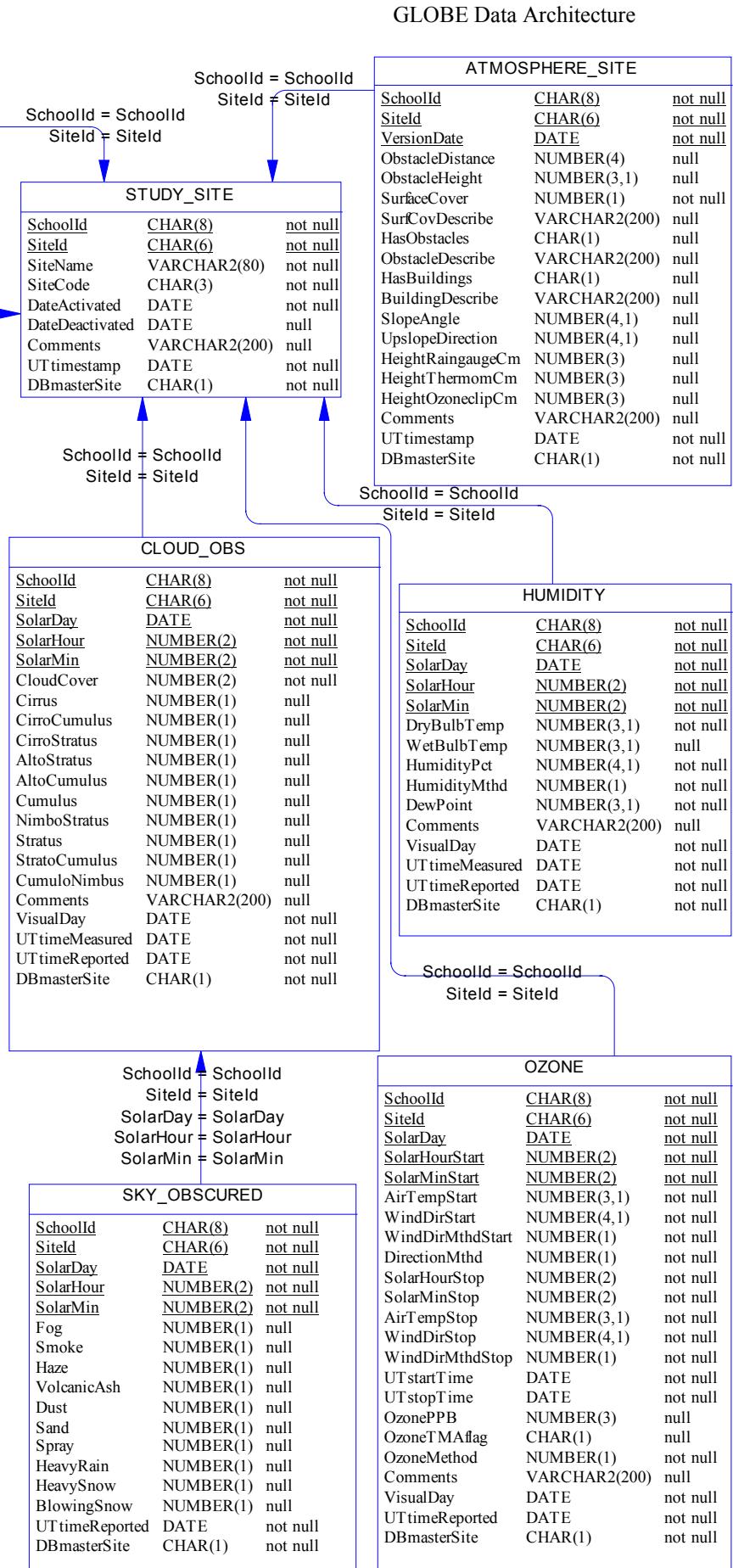
Physical Data Model

SITE_LOCATION		
SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null
Latitude	NUMBER(6,4)	not null
Longitude	NUMBER(7,4)	not null
Elevation	NUMBER(5,1)	not null
SubmitElev	NUMBER(5,1)	not null
DataSource	NUMBER(1)	not null
UTtimestamp	DATE	not null
DBmasterSite	CHAR(1)	not null

HAZE		
SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null
SolarDay	DATE	not null
SolarHour	NUMBER(2)	not null
SolarMin	NUMBER(2)	not null
PhotometerId	VARCHAR2(8)	not null
AirTemp	NUMBER(3,1)	null
BarometricMb	NUMBER(4)	not null
SkyColorEst	NUMBER(1)	not null
HazeEst	NUMBER(1)	null
Comments	VARCHAR2(200)	null
VisualDay	DATE	not null
UTtimeMeasured	DATE	not null
UTtimeReported	DATE	not null
DBmasterSite	CHAR(1)	not null

HAZE_WS		
SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null
SolarDay	DATE	not null
SolarHour	NUMBER(2)	not null
SolarMin	NUMBER(2)	not null
PhotometerId	VARCHAR2(8)	not null
ChannelId	CHAR(1)	not null
SampleNbr	NUMBER(1)	not null
DarkVoltage	NUMBER(5,4)	not null
SunlightVoltage	NUMBER(5,4)	not null
UTtimeMeasured	DATE	not null
UTtimeReported	DATE	not null
DBmasterSite	CHAR(1)	not null

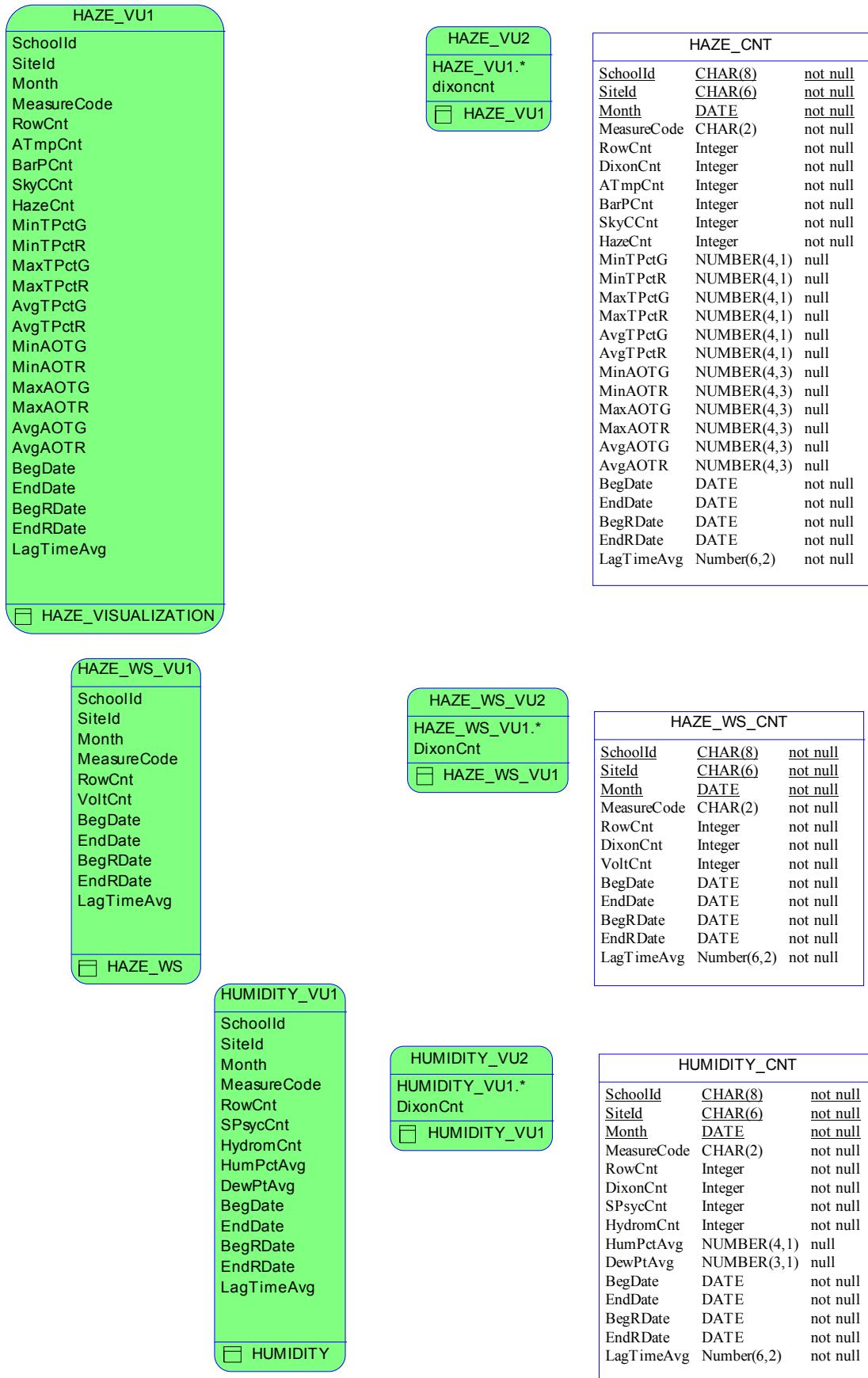
See HAZE_WS_SUMMARY and HAZE_VISUALIZATION views bc

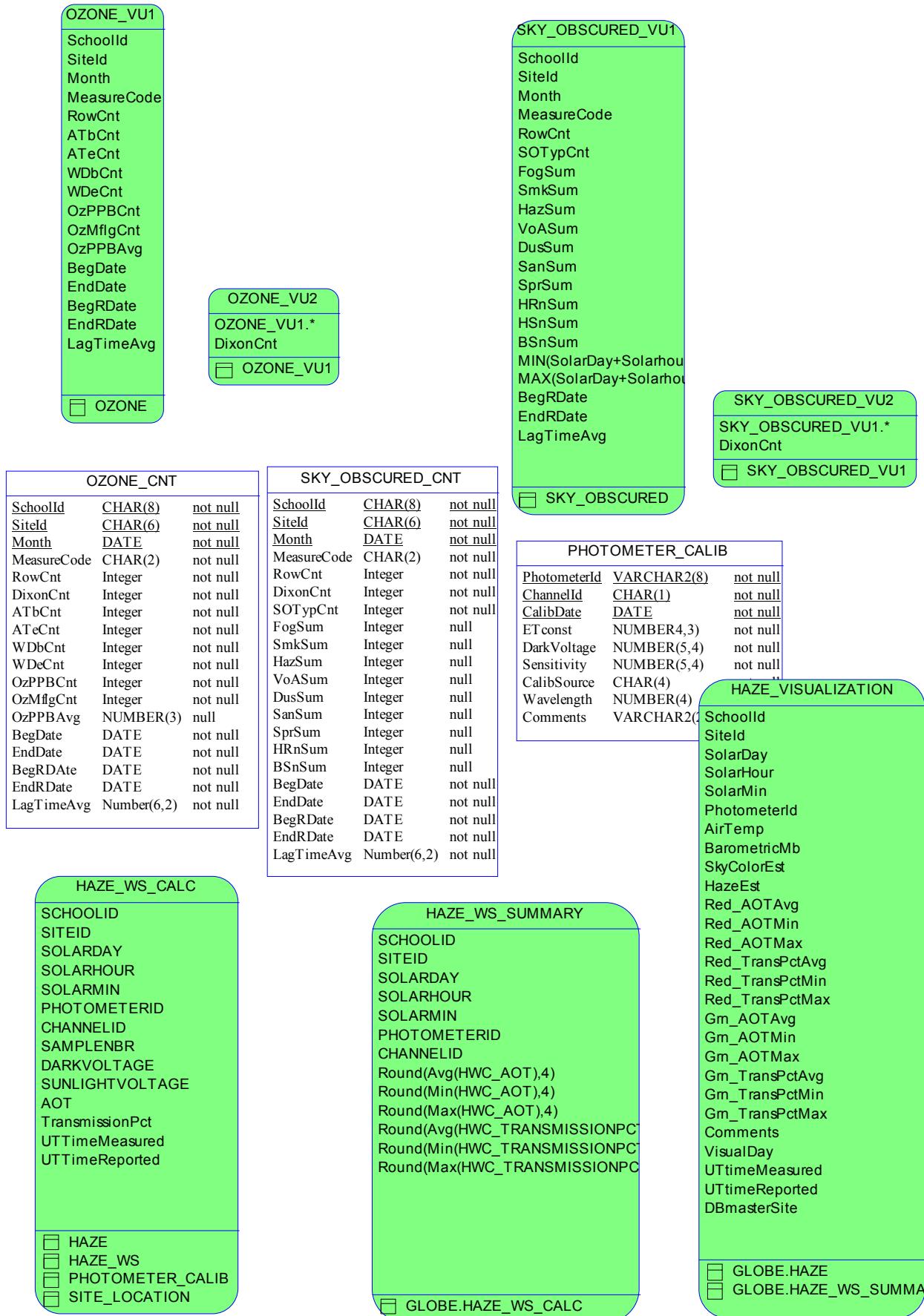


GLOBE Data Architecture

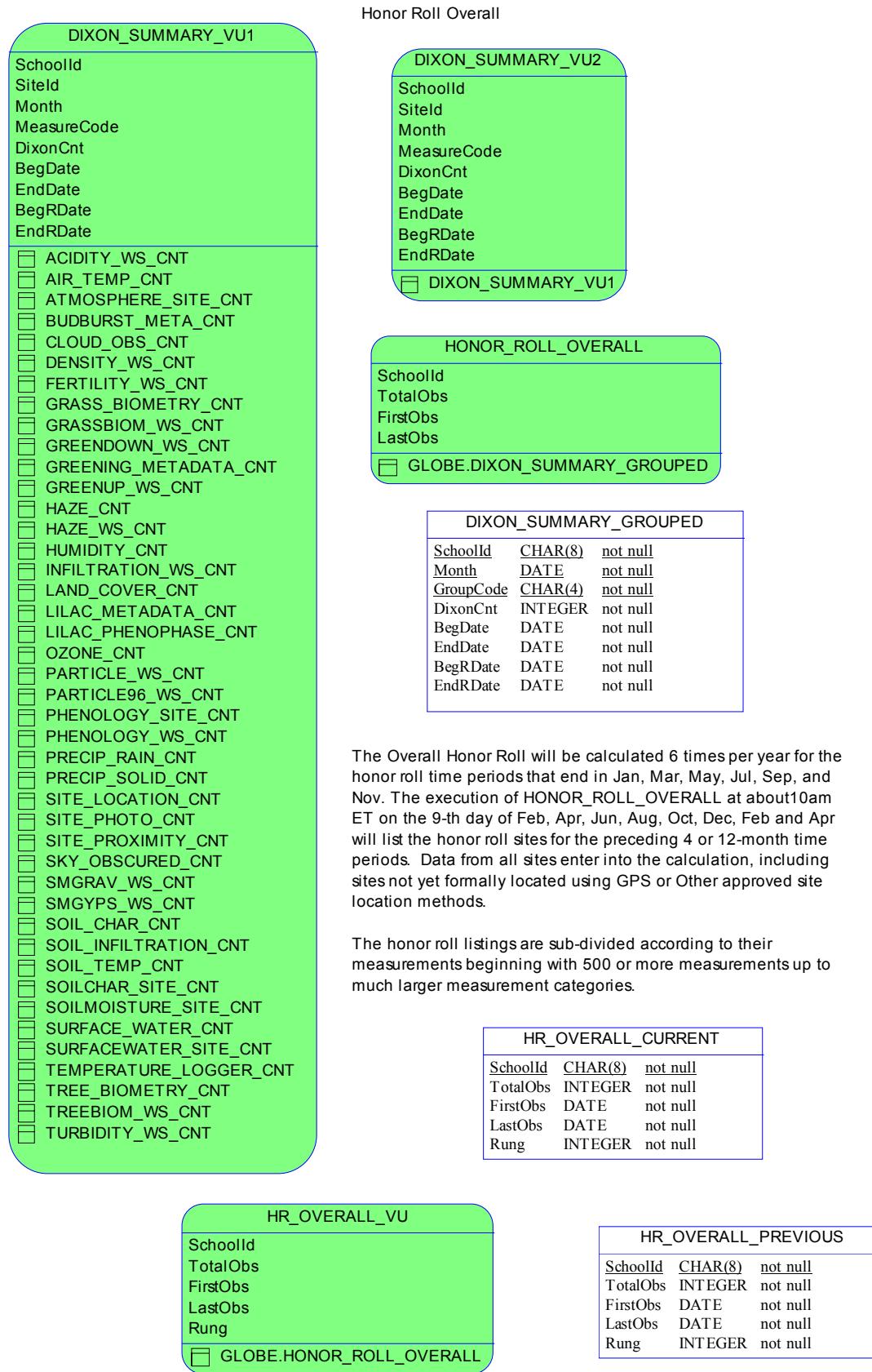
Physical Data Model

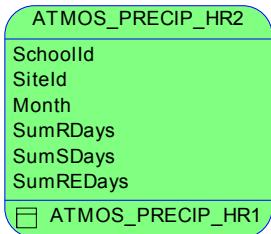
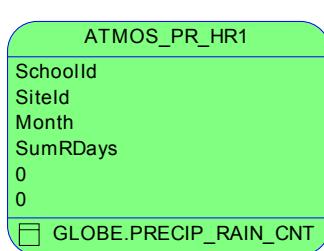
GLOBE Data Architecture





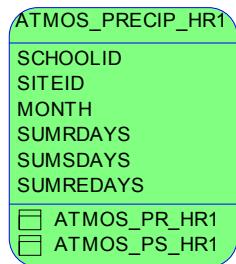
19 Diagram of Honor Roll



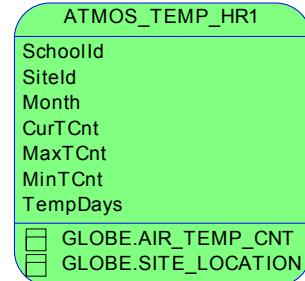
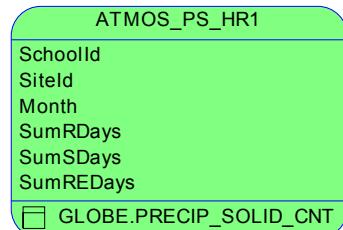


This view groups on the first 3 columns and sums over the other columns to determine the precip sites that satisfy the precipitation criteria for the honor roll.

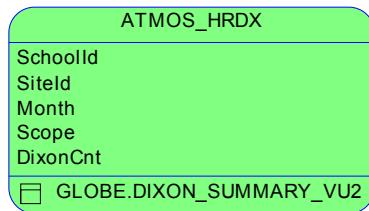
Atmosphere Honor Roll



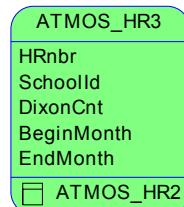
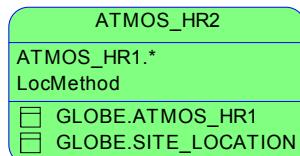
This view is the UNION of the above 2 views



This view analyzes the AIR_TEMP table to determine the air temperature sites that satisfy the temperature criteria for the honor roll.



This view retrieves the DixonCnt for AirTemp, PrecipRain, and PrecipSolid from the appropriate _CNT tables.



The Atmosphere Honor Roll will be calculated 6 times per year for the 4-month periods that end in Jan, Mar, May, Jul, Sep, and Nov. The execution of the CURRENT snapshot at about 10am ET on the 9-th day of Feb, Apr, Jun, Aug, Oct, and Dec will list the honor roll sites for the previous 4-month periods. Its calculation depends on ATMOS_HR3. The PREVIOUS snapshot is executed about 10am ET on the 1-st day of the same months, and it just copies the content of CURRENT into PREVIOUS.

HR_ATMOS_CURRENT

HRnbr	INTEGER	not null
SchoolId	CHAR(8)	not null
DixonCnt	INTEGER	not null
BeginMonth	DATE	not null
EndMonth	DATE	not null

HR_ATMOS_PREVIOUS

HRnbr	INTEGER	not null
SchoolId	CHAR(8)	not null
DixonCnt	INTEGER	not null
BeginMonth	DATE	not null
EndMonth	DATE	not null

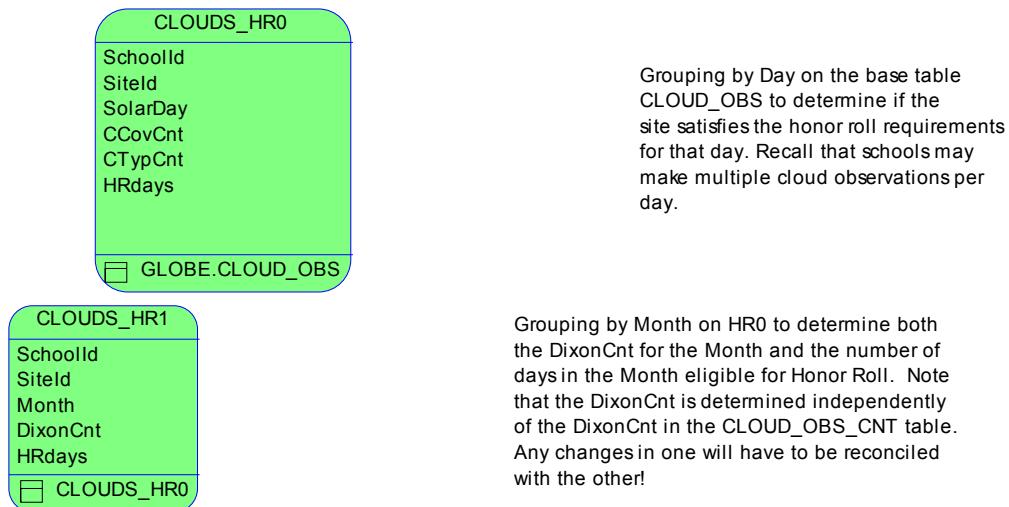


The Hydrology Honor Roll will be calculated 6 times per year for the 4-month periods that end in Jan, Mar, May, Jul, Sep, and Nov. The execution of view

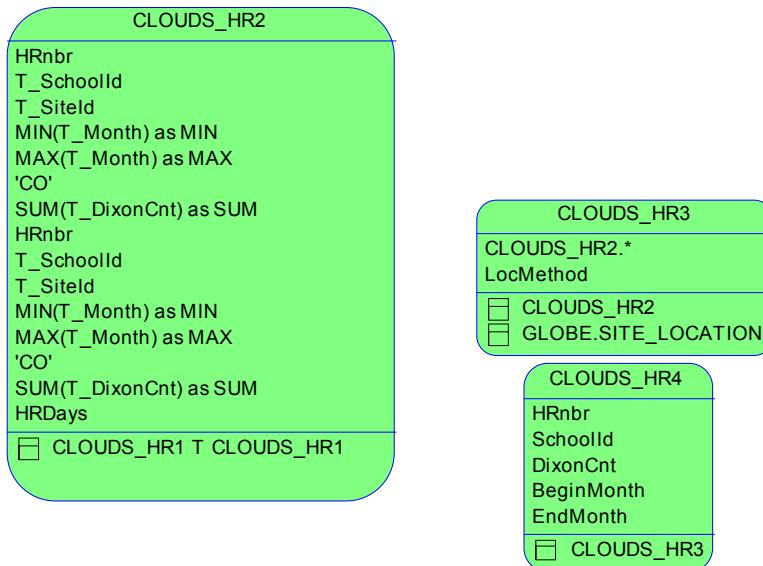
SURFACE_WATER_HR6 as the HR_HYDRO_CURRENT snapshot at 10am ET on the 9-th day of Feb, Apr, Jun, Aug, Oct, and Dec will list the honor roll sites for the previous 4-month periods. The PREVIOUS snapshot is done over the CURRENT snapshot on the 1-st day of the same months.

HR_HYDRO_CURRENT			HR_HYDRO_PREVIOUS		
HRnbr	INTEGER	not null	HRnbr	INTEGER	not null
SchoollId	CHAR(8)	not null	SchoollId	CHAR(8)	not null
DixonCnt	INTEGER	not null	DixonCnt	INTEGER	not null
BeginMonth	DATE	not null	BeginMonth	DATE	not null
EndMonth	DATE	not null	EndMonth	DATE	not null

Clouds Honor Roll



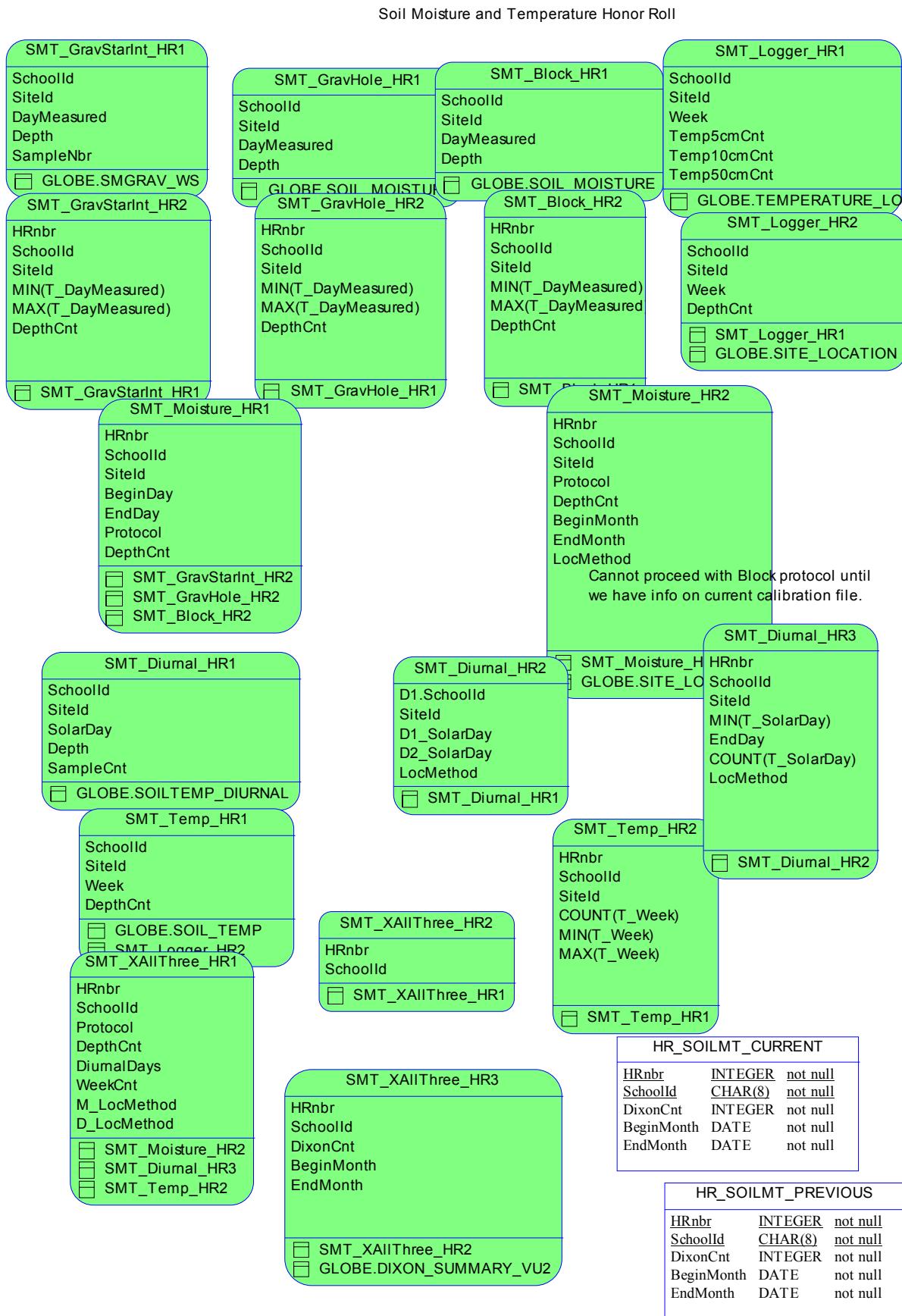
The view CLOUDS_HR2 groups the Months from view HR1 into overlapping 4-month periods beginning Feb 1, 1999, and applies the honor roll criteria that cloud observations must be reported for more than 70% of the days in any 4-month period.

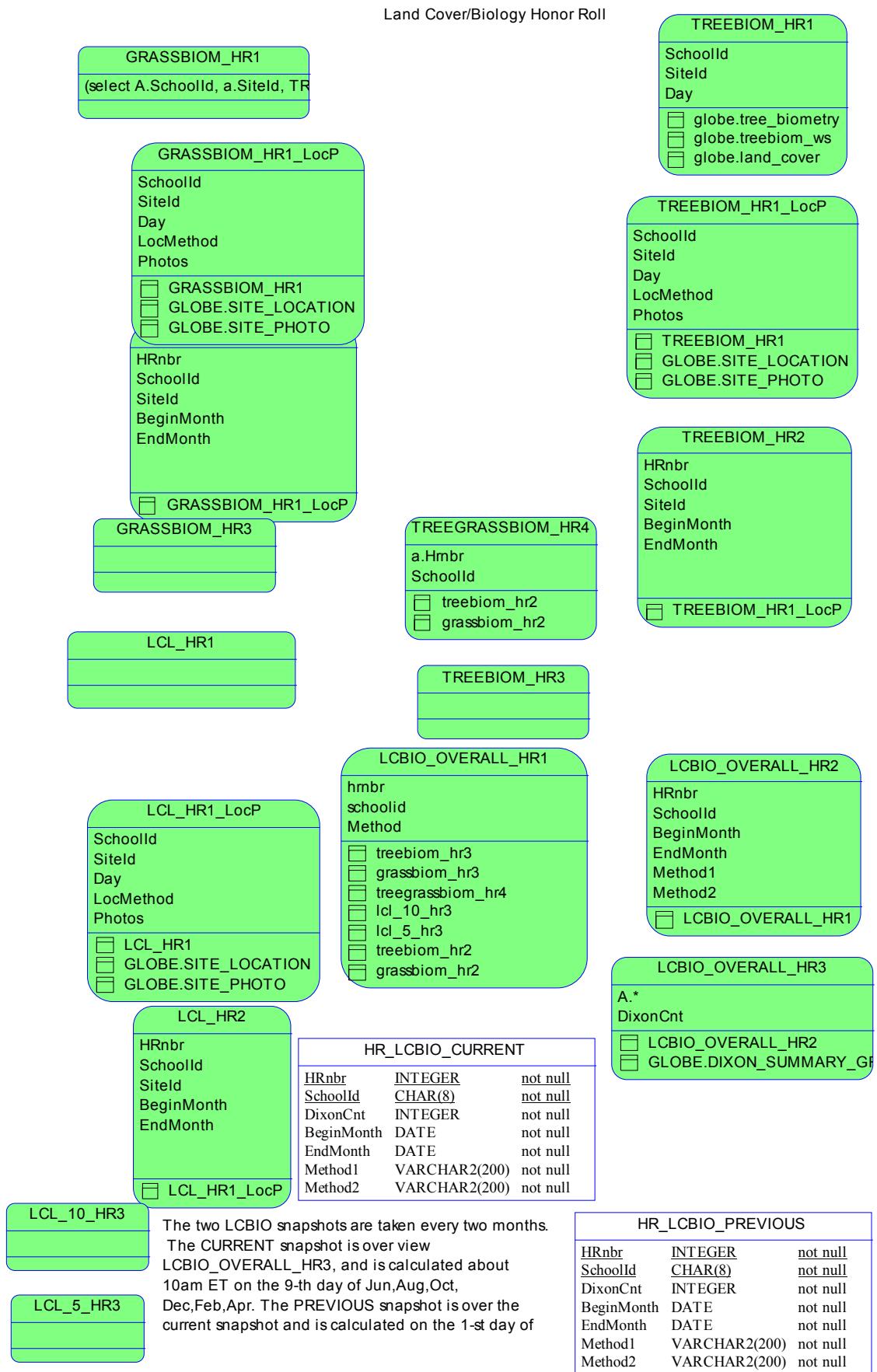


The Clouds Honor Roll will be calculated 6 times per year for the 4-month periods that end in January, March, May, July, September, and November. The execution of CLOUDS_HR4 at 10am ET on the 9-th day of February, April, June, August, October, and December, to populate the snapshot HR_HYDR_CURRENT, will identify the Hydrology honor roll sites for the previous 4-month periods. The snapshot HR_HYDRO_PREVIOUS is populated from the CURRENT snapshot on the 1-st day of the same months.

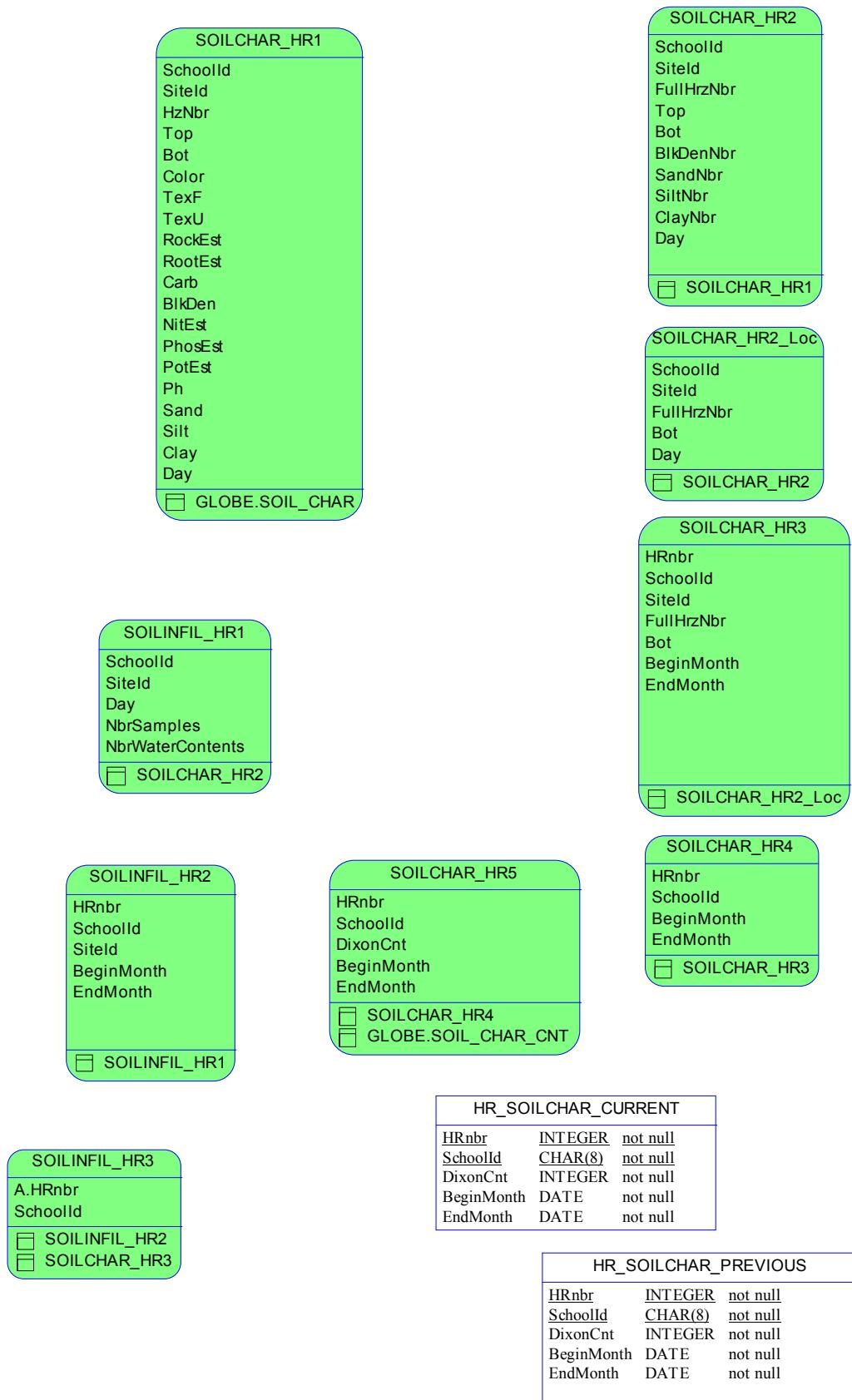
HR_CLOUDS_CURRENT		
HRnbr	INTEGER	not null
SchoolId	CHAR(8)	not null
DixonCnt	INTEGER	not null
BeginMonth	DATE	not null
EndMonth	DATE	not null

HR_CLOUDS_PREVIOUS		
HRnbr	INTEGER	not null
SchoolId	CHAR(8)	not null
DixonCnt	INTEGER	not null
BeginMonth	DATE	not null
EndMonth	DATE	not null





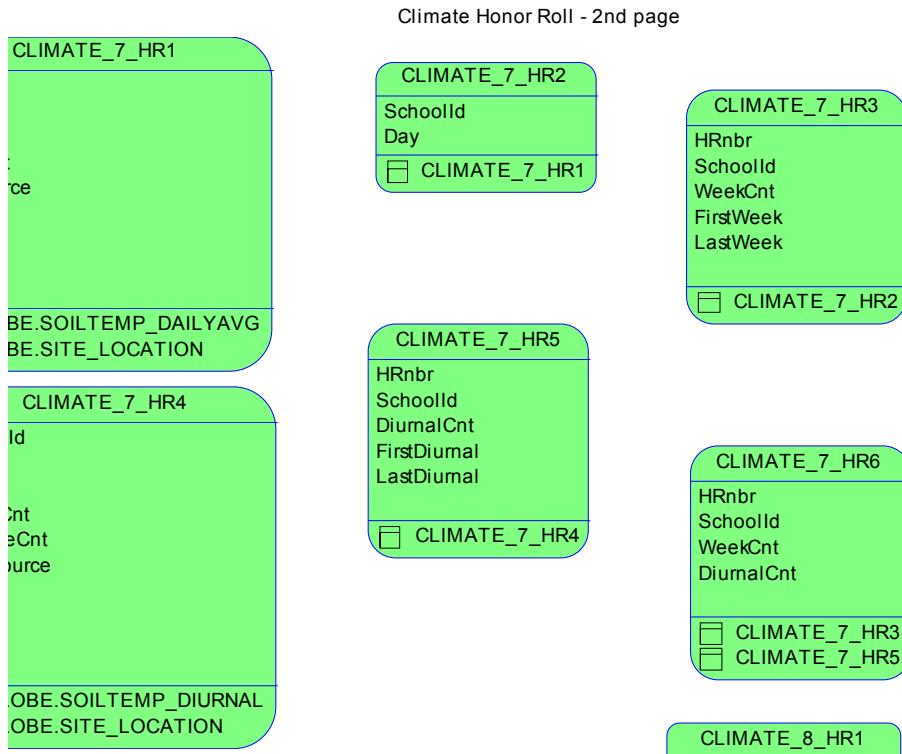
Soil Characterization Honor Roll



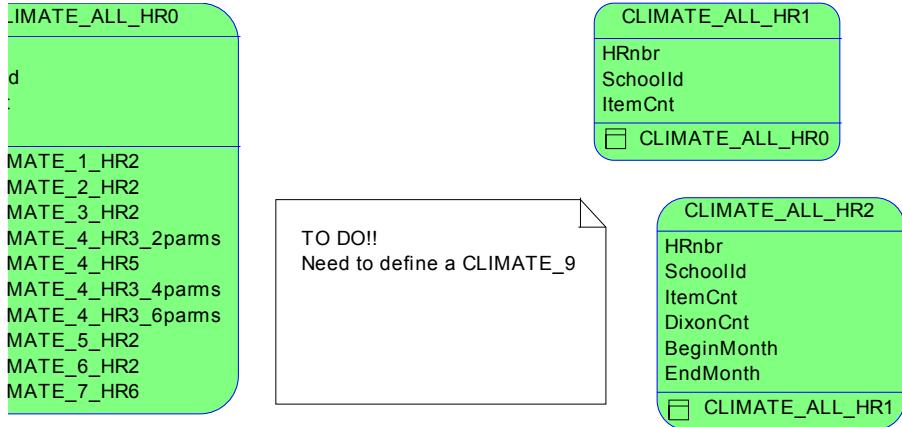
Climate Honor Roll



The climate honor roll tracks data for a school over time across different categories. A UNION operation (HRnbr, SiteId) is used to merge sites. Results from previous years are included in the PREVIOUS year's data.



Item #8 still under development - What is a full data report from a Biology Site. When does 3-year period start?

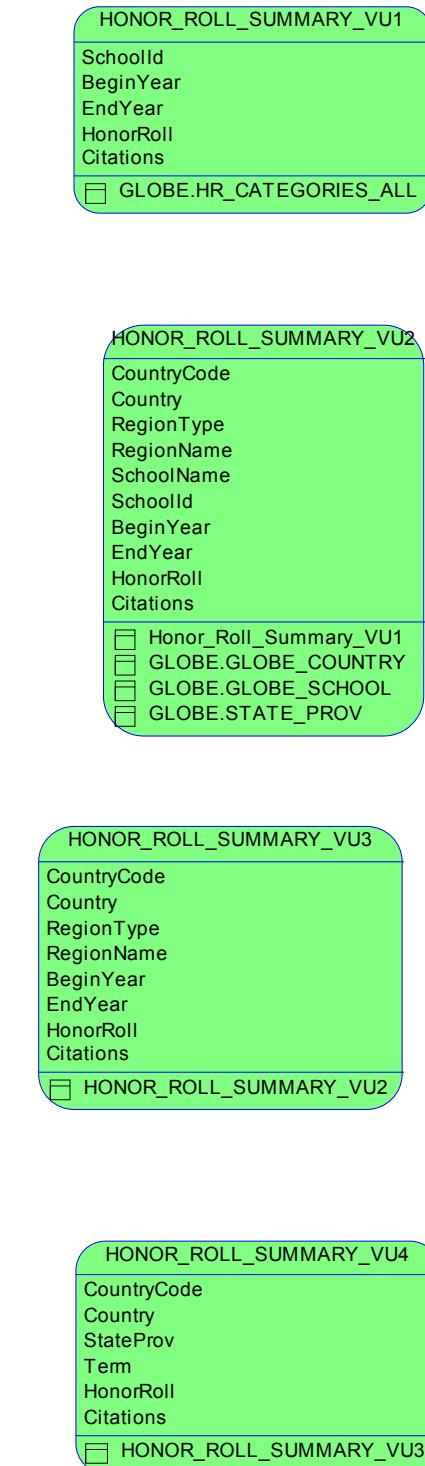


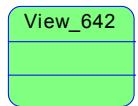
Climate Honor Roll has 8 different categories. If a student qualifies in 3 or more categories for a given school year, they qualify for the Climate HR. Some of the above results can be grouped by SchoolId with a COUNT of the number of items satisfied. The above can populate the CURRENT and JS snapshots below.

HR_CLIMATE_CURRENT			
HRnbr	INTEGER	not null	
School	CHAR(8)	not null	
DixonCnt	INTEGER	not null	
BeginMonth	DATE	not null	
EndMonth	DATE	not null	
ItemCnt	INTEGER	not null	

HR_CLIMATE_PREVIOUS			
HRnbr	INTEGER	not null	
SchoolId	CHAR(8)	not null	
DixonCnt	INTEGER	not null	
BeginMonth	DATE	not null	
EndMonth	DATE	not null	
ItemCnt	INTEGER	not null	

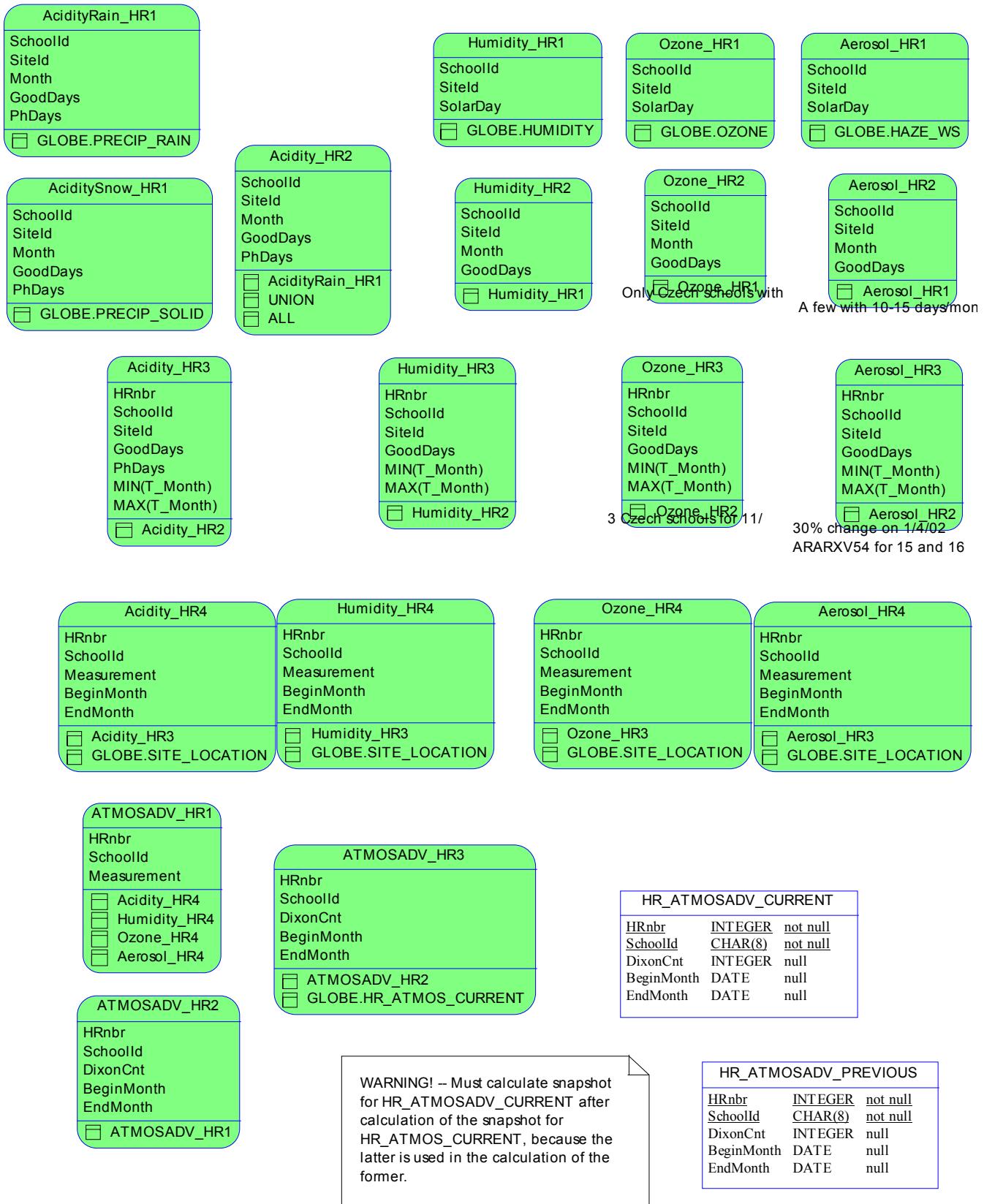
Honor Roll Summary



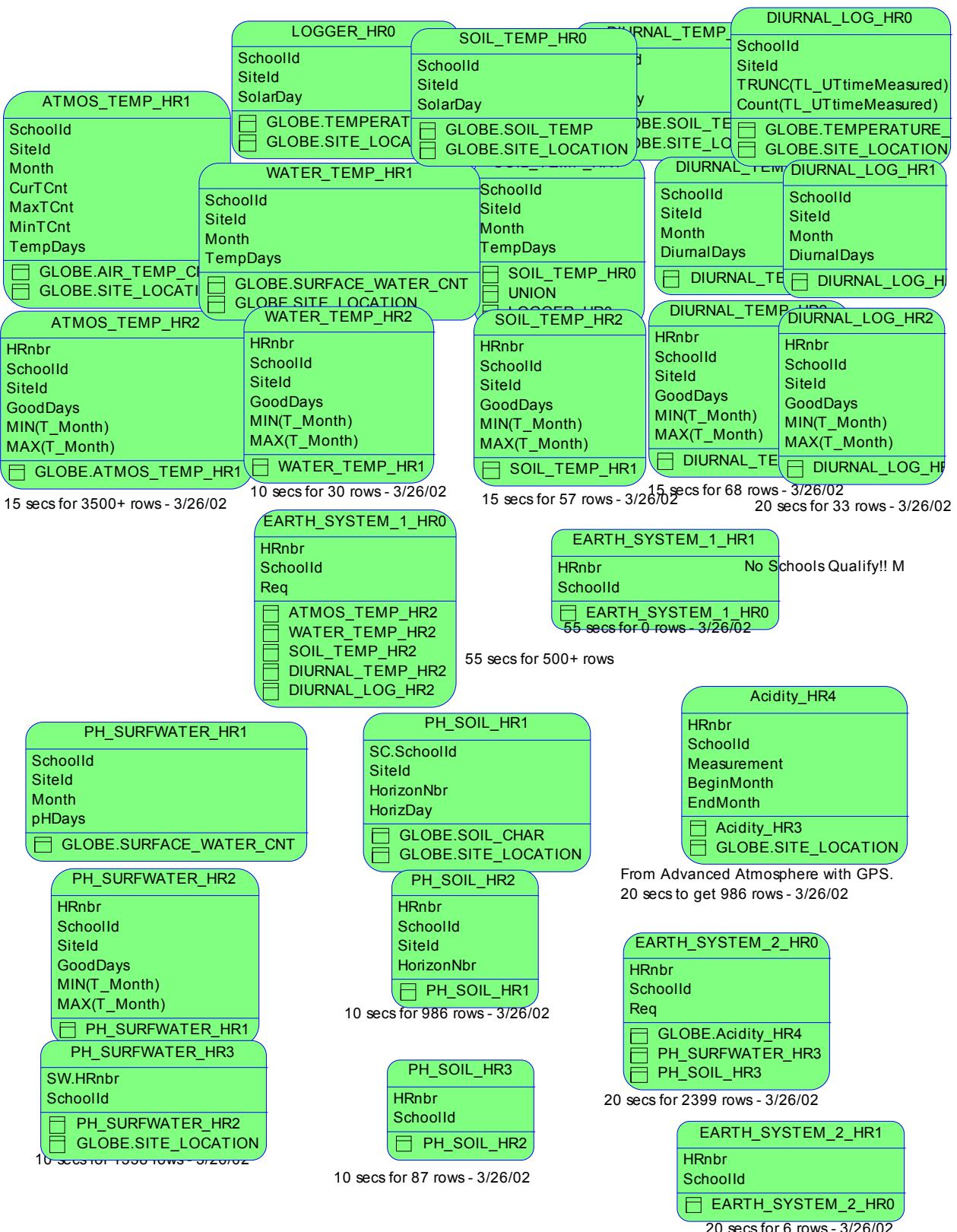


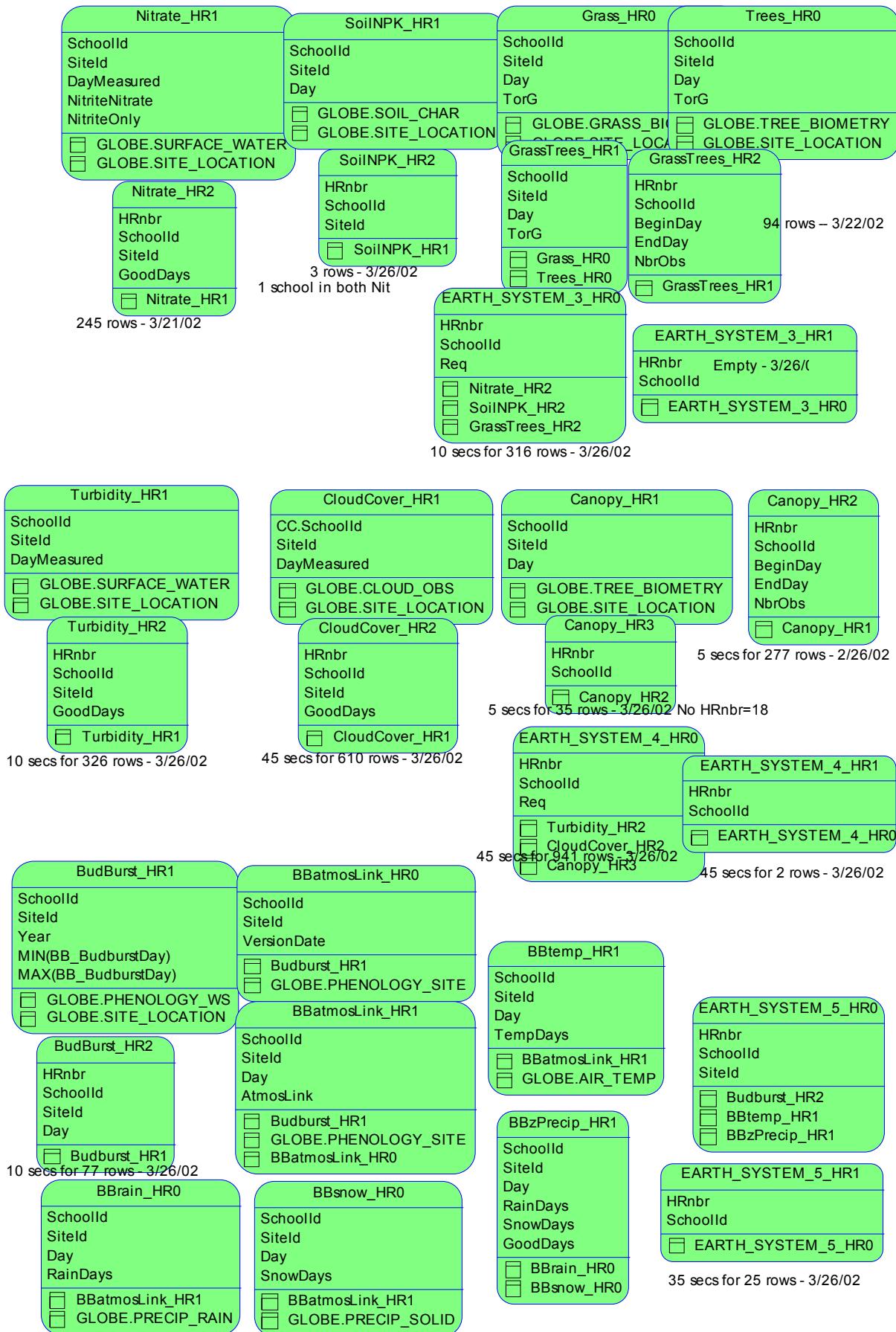
20 Diagram of Honor Roll _ AdvAtmos

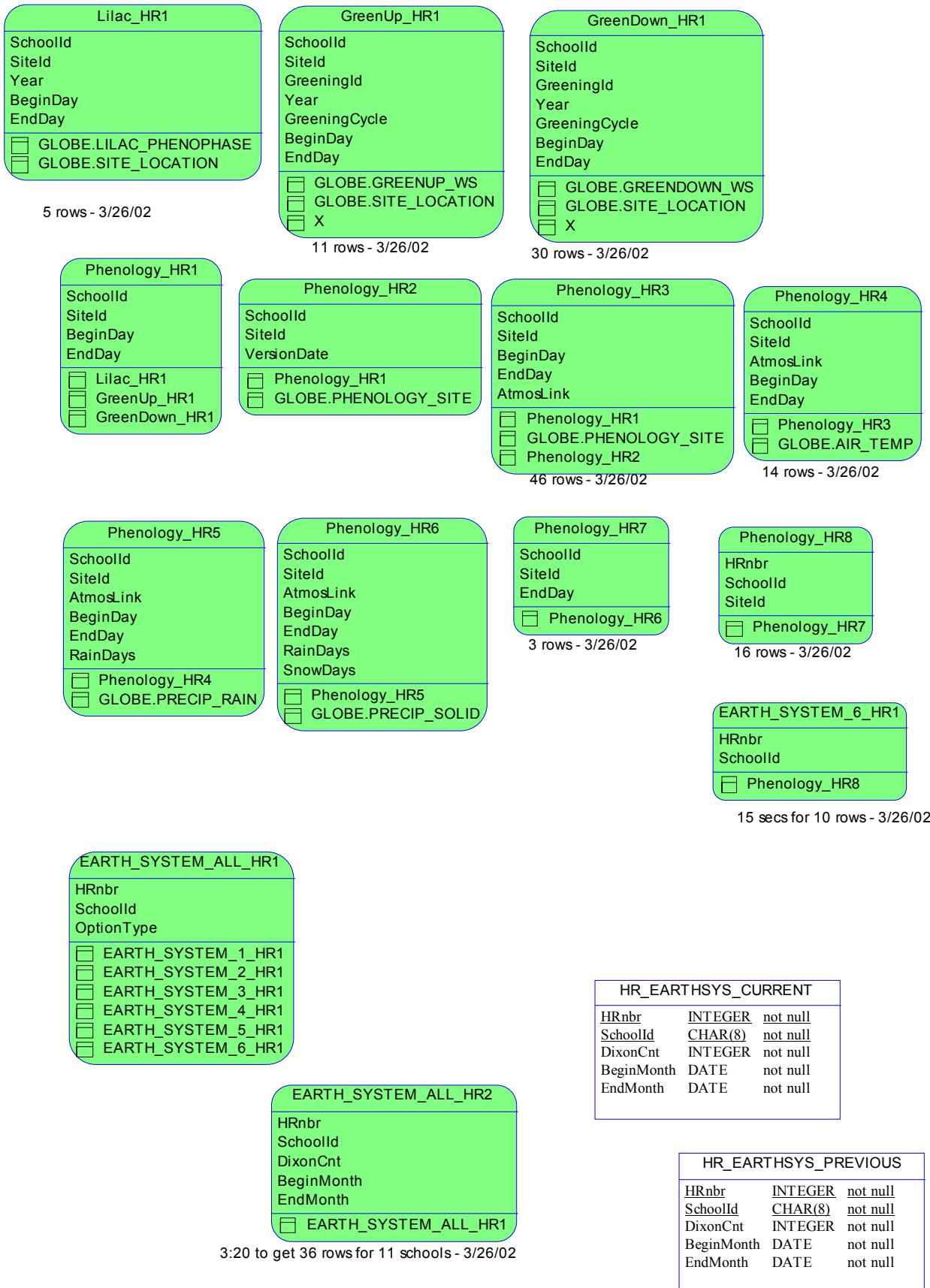
Advanced Atmosphere Honor Roll



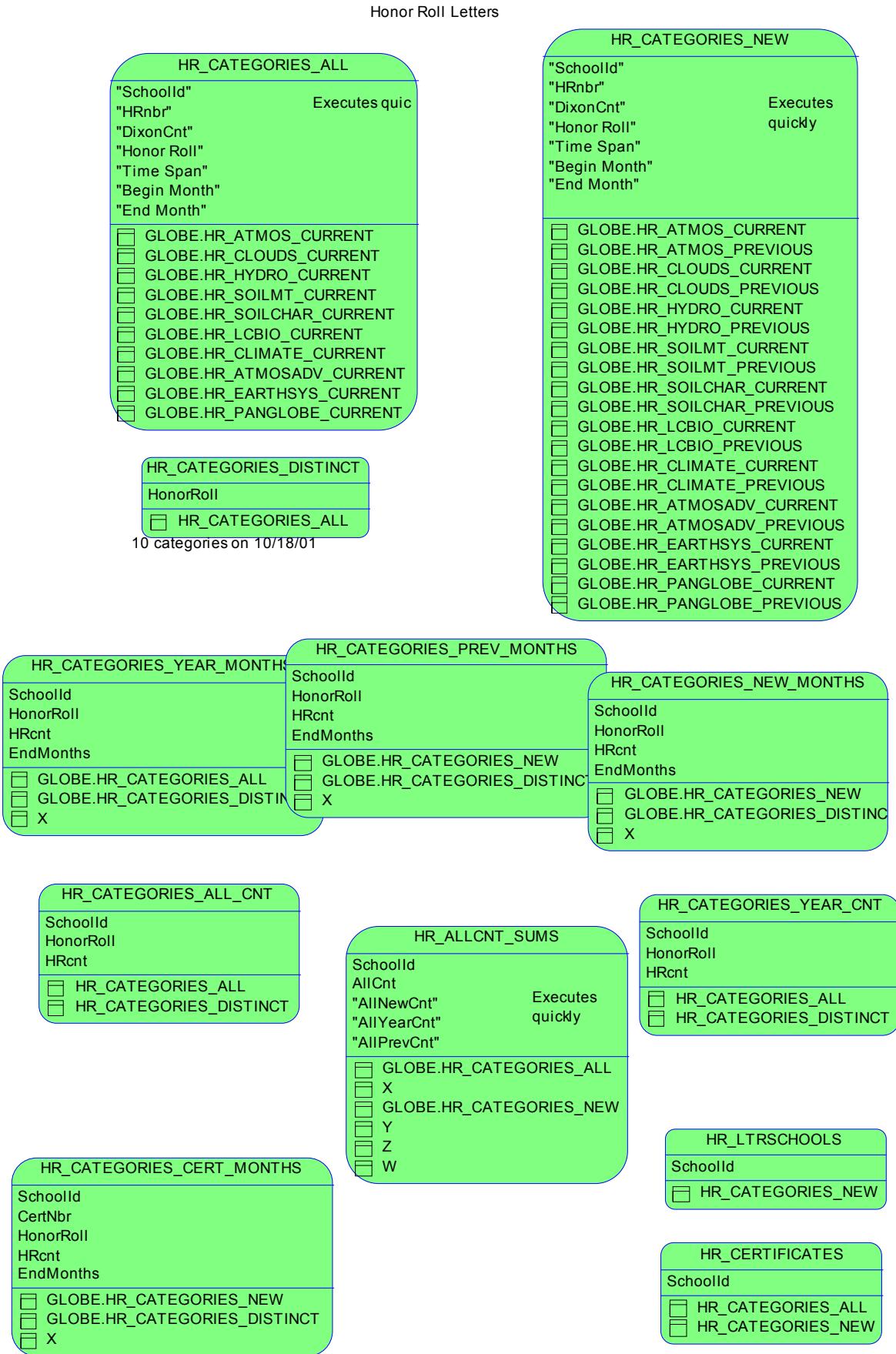
21 Diagram of Honor Roll _ Earth System

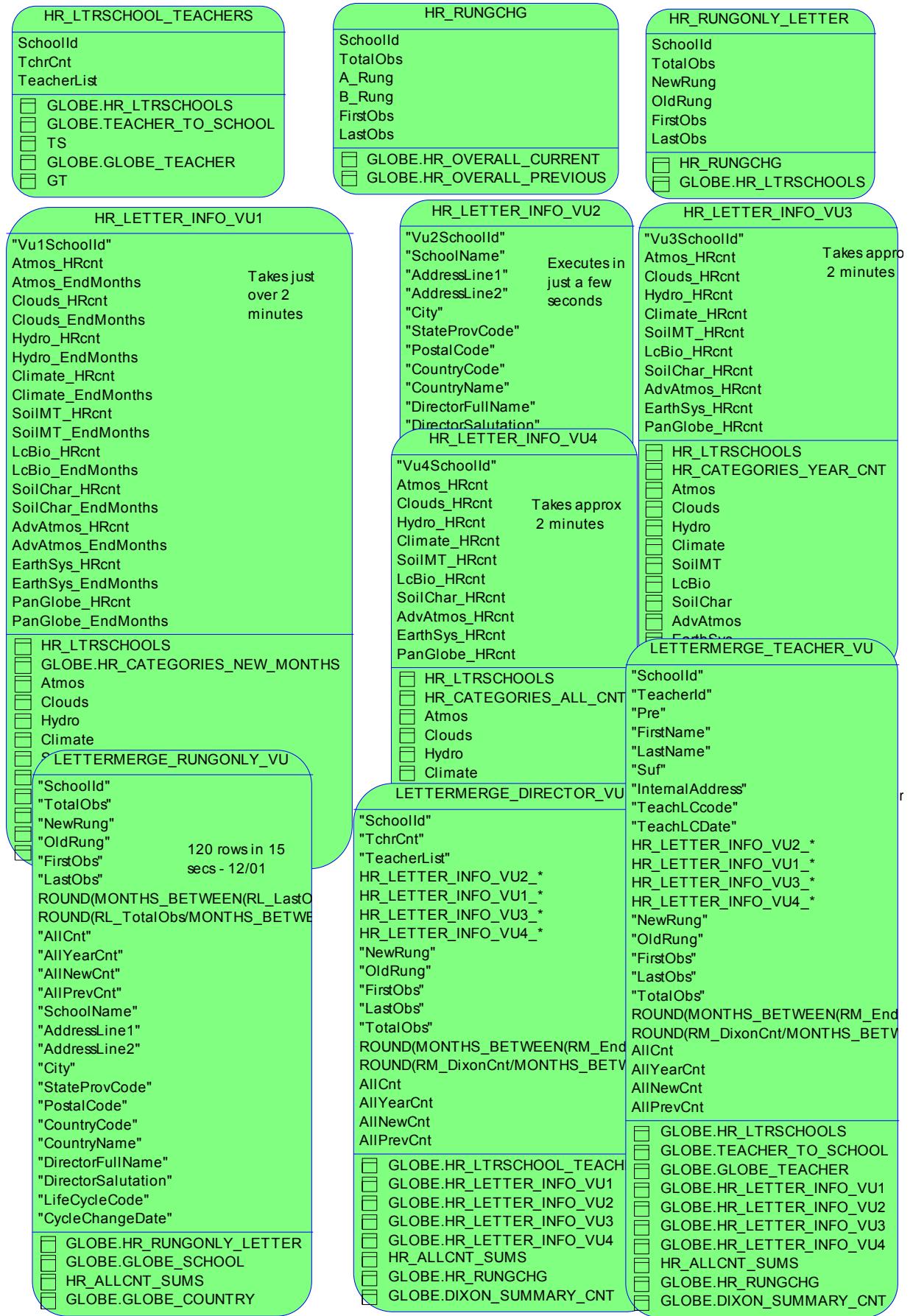






22 Diagram of Honor Roll _ Letters





Honor Roll -- Lettermerge Tables
 (revised March 29, 2002)

LETTERMERGE_DIRECTOR		
SchoolId	CHAR(8)	not null
SchoolName	VARCHAR2(100)	null
AddressLine1	VARCHAR2(50)	null
AddressLine2	VARCHAR2(50)	null
City	VARCHAR2(30)	null
StateProvCode	VARCHAR2(5)	null
PostalCode	VARCHAR2(10)	null
CountryName	VARCHAR2(32)	not null
DirectorFullName	VARCHAR2(80)	null
DirectorSalutation	VARCHAR2(32)	null
LifeCycleCode	CHAR(1)	not null
CycleChangeDate	DATE	not null
TchrCnt	INTEGER	not null
TeacherList	VARCHAR2(200)	null
AtmosCntNew	INTEGER	null
AtmosCntYear	INTEGER	null
AtmosCntAll	INTEGER	null
AtmosMonthsNew	VARCHAR2(200)	null
CloudsCntNew	INTEGER	null
CloudsCntYear	INTEGER	null
CloudsCntAll	INTEGER	null
CloudsMonthsNew	VARCHAR2(200)	null
HydroCntNew	INTEGER	null
HydroCntYear	INTEGER	null
HydroCntAll	INTEGER	null
HydroMonthsNew	VARCHAR2(200)	null
ClimateCntNew	INTEGER	null
ClimateCntYear	INTEGER	null
ClimateCntAll	INTEGER	null
ClimateMonthsNew	VARCHAR2(200)	null
SoilMTCntNew	INTEGER	null
SoilMTCntYear	INTEGER	null
SoilMTCntAll	INTEGER	null
SoilMTMonthsNew	VARCHAR2(200)	null
LcBioCntNew	INTEGER	null
LcBioCntYear	INTEGER	null
LcBioCntAll	INTEGER	null
LcBioMonthsNew	VARCHAR2(200)	null
SoilCharCntNew	INTEGER	null
SoilCharCntYear	INTEGER	null
SoilCharCntAll	INTEGER	null
SoilCharMonthsNew	VARCHAR2(200)	null
AdvAtmosCntNew	INTEGER	null
AdvAtmosCntYear	INTEGER	null
AdvAtmosCntAll	INTEGER	null
AdvAtmosMonthsNew	VARCHAR2(200)	null
EarthSysCntNew	INTEGER	null
EarthSysCntYear	INTEGER	null
EarthSysCntAll	INTEGER	null
EarthSysMonthsNew	VARCHAR2(200)	null
PanGlobeCntNew	INTEGER	null
PanGlobeCntYear	INTEGER	null
PanGlobeCntAll	INTEGER	null
PanGlobeMonthsNew	VARCHAR2(200)	null
NewRung	INTEGER	null
OldRung	INTEGER	null
FirstObs	DATE	not null
LastObs	DATE	not null
TotalObs	INTEGER	not null
ObsMonths	INTEGER	not null
ObsRate	INTEGER	not null
AllCnt	INTEGER	not null
AllYearCnt	INTEGER	not null
AllNewCnt	INTEGER	not null
AllPrevCnt	INTEGER	not null

LETTERMERGE_RUNONLY		
SchoolId	CHAR(8)	not null
SchoolName	VARCHAR2(100)	null
AddressLine1	VARCHAR2(50)	null
AddressLine2	VARCHAR2(50)	null
City	VARCHAR2(30)	null
StateProvCode	VARCHAR2(5)	null
PostalCode	VARCHAR2(10)	null
CountryName	VARCHAR2(32)	not null
DirectorFullName	VARCHAR2(80)	null
DirectorSalutation	VARCHAR2(32)	null
LifeCycleCode	CHAR(1)	not null
CycleChangeDate	DATE	not null
NewRung	INTEGER	not null
OldRung	INTEGER	null
FirstObs	DATE	not null
LastObs	DATE	not null
TotalObs	INTEGER	not null
ObsMonths	INTEGER	not null
ObsRate	INTEGER	not null
AllCnt	INTEGER	not null
AllYearCnt	INTEGER	not null
AllNewCnt	INTEGER	not null
AllPrevCnt	INTEGER	not null

LETTERMERGE_TEACHER

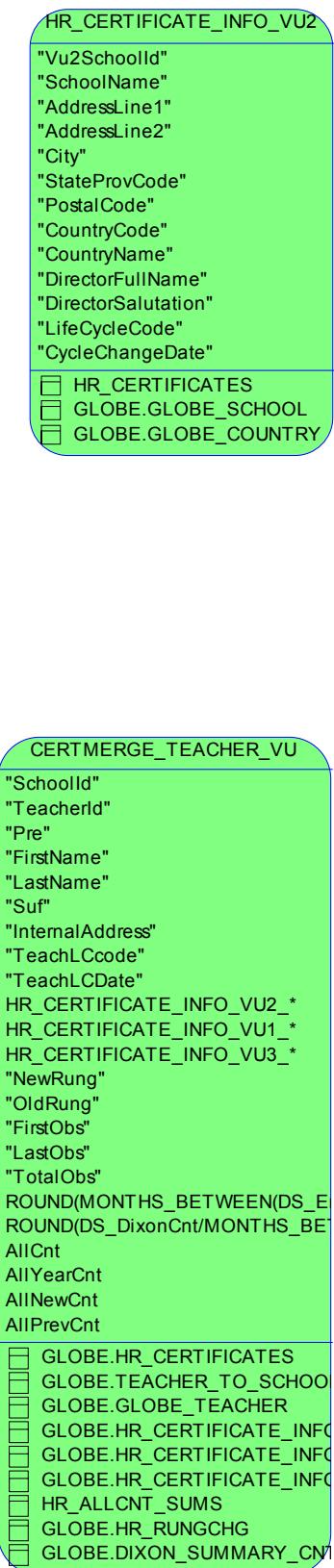
TeacherId	CHAR(8)	not null
SchoolId	CHAR(8)	not null
Pre	VARCHAR2(10)	null
FirstName	VARCHAR2(32)	null
LastName	VARCHAR2(32)	not null
Suf	VARCHAR2(10)	null
InternalAddress	VARCHAR2(50)	null
TeachLCcode	CHAR(1)	not null
TeachLCDDate	DATE	not null
SchoolName	VARCHAR2(100)	null
AddressLine1	VARCHAR2(50)	null
AddressLine2	VARCHAR2(50)	null
City	VARCHAR2(30)	null
StateProvCode	VARCHAR2(5)	null
PostalCode	VARCHAR2(10)	null
CountryName	VARCHAR2(32)	not null
LifeCycleCode	CHAR(1)	not null
CycleChangeDate	DATE	not null
AtmosCntNew	INTEGER	null
AtmosCntYear	INTEGER	null
AtmosCntAll	INTEGER	null
AtmosMonthsNew	VARCHAR2(200)	null
CloudsCntNew	INTEGER	null
CloudsCntYear	INTEGER	null
CloudsCntAll	INTEGER	null
CloudsMonthsNew	VARCHAR2(200)	null
HydroCntNew	INTEGER	null
HydroCntYear	INTEGER	null
HydroCntAll	INTEGER	null
HydroMonthsNew	VARCHAR2(200)	null
ClimateCntNew	INTEGER	null
ClimateCntYear	INTEGER	null
ClimateCntAll	INTEGER	null
ClimateMonthsNew	VARCHAR2(200)	null
SoilMTCntNew	INTEGER	null
SoilMTCntYear	INTEGER	null
SoilMTCntAll	INTEGER	null
SoilMTMonthsNew	VARCHAR2(200)	null
LcBioCntNew	INTEGER	null
LcBioCntYear	INTEGER	null
LcBioCntAll	INTEGER	null
LcBioMonthsNew	VARCHAR2(200)	null
SoilCharCntNew	INTEGER	null
SoilCharCntYear	INTEGER	null
SoilCharCntAll	INTEGER	null
SoilCharMonthsNew	VARCHAR2(200)	null
AdvAtmosCntNew	INTEGER	null
AdvAtmosCntYear	INTEGER	null
AdvAtmosCntAll	INTEGER	null
AdvAtmosMonthsNew	VARCHAR2(200)	null
EarthSysCntNew	INTEGER	null
EarthSysCntYear	INTEGER	null
EarthSysCntAll	INTEGER	null
EarthSysMonthsNew	VARCHAR2(200)	null
PanGlobeCntNew	INTEGER	null
PanGlobeCntYear	INTEGER	null
PanGlobeCntAll	INTEGER	null
PanGlobeMonthsNew	VARCHAR2(200)	null
NewRung	INTEGER	null
OldRung	INTEGER	null
FirstObs	DATE	not null
LastObs	DATE	not null
TotalObs	INTEGER	not null
ObsMonths	INTEGER	not null
ObsRate	INTEGER	not null
AllCnt	INTEGER	not null
AllYearCnt	INTEGER	not null
AllNewCnt	INTEGER	not null
AllPrevCnt	INTEGER	not null

HR_CERTIFICATES_NEW		
"SchoolId"		
"SchoolName"		
"CertNbr"		
"HonorRoll"		
"NbrNew"		
"AllCertMonths"		
<input type="checkbox"/> HR_CATEGORIES_CERT_MONTHS		
<input type="checkbox"/> LETTERMERGE_DIRECTOR		

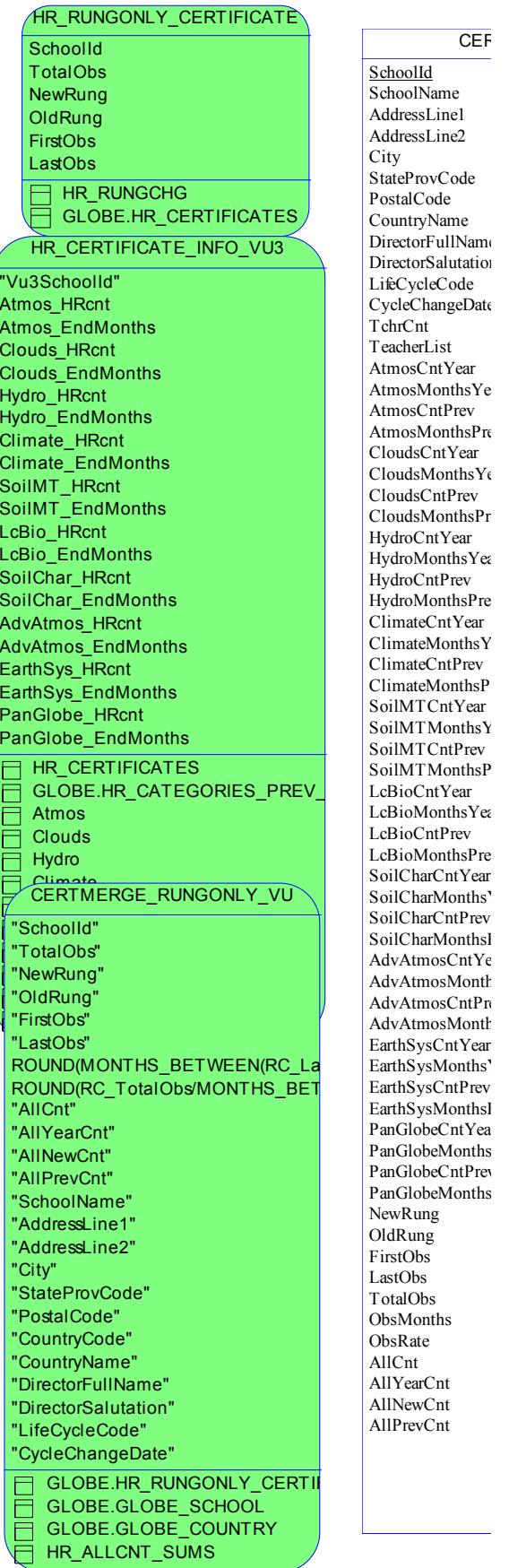
The Lettermerge mailings are done 5 times per year just after the 10th day of June, August, October, December, and February. Newly achieved or revised certificates for previous years are given by the above "New" table.

The annual Certificate mailings are done once per year just after the 10th day of April. The new certificates for that year only are given by the below "April" table.

Physical Data Model



GLOBE Data Architecture



Honor Roll – Certmerge Tables

(revised March 29, 2002)

	<u>CHAR(8)</u>	<u>not null</u>	
VARCHAR2(100)	CHAR(8)	not null	
VARCHAR2(50)	CHAR(8)	not null	
VARCHAR2(50)	CHAR(8)	not null	
VARCHAR2(30)	CHAR(8)	not null	
VARCHAR2(5)	CHAR(8)	not null	
VARCHAR2(10)	CHAR(8)	not null	
VARCHAR2(32)	CHAR(8)	not null	
e	VARCHAR2(80)	CHAR(8)	not null
n	VARCHAR2(32)	CHAR(8)	not null
e	CHAR(1)	CHAR(8)	not null
DATE	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
VARCHAR2(200)	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
CHAR(200)	CHAR(1)	not null	
ev	VARCHAR2(200)	CHAR(1)	not null
ear	INTEGER	CHAR(1)	not null
rev	VARCHAR2(200)	CHAR(1)	not null
ar	INTEGER	CHAR(1)	not null
VARCHAR2(200)	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
VARCHAR2(200)	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
VARCHAR2(200)	CHAR(1)	not null	
'rev	VARCHAR2(200)	CHAR(1)	not null
'ear	INTEGER	CHAR(1)	not null
'rev	VARCHAR2(200)	CHAR(1)	not null
ar	INTEGER	CHAR(1)	not null
VARCHAR2(200)	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
VARCHAR2(200)	CHAR(1)	not null	
Year	VARCHAR2(200)	CHAR(1)	not null
Prev	INTEGER	CHAR(1)	not null
VARCHAR2(200)	CHAR(1)	not null	
ear	INTEGER	CHAR(1)	not null
hsYear	VARCHAR2(200)	CHAR(1)	not null
ev	INTEGER	CHAR(1)	not null
hsPrev	VARCHAR2(200)	CHAR(1)	not null
r	INTEGER	CHAR(1)	not null
Year	VARCHAR2(200)	CHAR(1)	not null
r	INTEGER	CHAR(1)	not null
Prev	VARCHAR2(200)	CHAR(1)	not null
ir	INTEGER	CHAR(1)	not null
sYear	VARCHAR2(200)	CHAR(1)	not null
v	INTEGER	CHAR(1)	not null
sPrev	VARCHAR2(200)	CHAR(1)	not null
INTEGER	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
DATE	CHAR(1)	not null	
DATE	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	
INTEGER	CHAR(1)	not null	

CERTMERGE_RUNONLY		
SchoolId	<u>CHAR(8)</u>	<u>not null</u>
SchoolName	VARCHAR2(100)	CHAR(8)
AddressLine1	VARCHAR2(50)	CHAR(8)
AddressLine2	VARCHAR2(50)	CHAR(8)
City	VARCHAR2(30)	CHAR(8)
StateProvCode	VARCHAR2(5)	CHAR(8)
PostalCode	VARCHAR2(10)	CHAR(8)
CountryName	VARCHAR2(32)	CHAR(8)
DirectorFullName	VARCHAR2(80)	CHAR(8)
DirectorSalutation	VARCHAR2(32)	CHAR(8)
LifeCycleCode	CHAR(1)	CHAR(8)
CycleChangeDate	DATE	CHAR(8)
NewRung	INTEGER	CHAR(8)
OldRung	INTEGER	CHAR(8)
FirstObs	DATE	CHAR(8)
LastObs	DATE	CHAR(8)
TotalObs	INTEGER	CHAR(8)
ObsMonths	INTEGER	CHAR(8)
ObsRate	INTEGER	CHAR(8)
AllCnt	INTEGER	CHAR(8)
AllYearCnt	INTEGER	CHAR(8)
AllNewCnt	INTEGER	CHAR(8)
AllPrevCnt	INTEGER	CHAR(8)

CERTMERGE_TEACHER		
TeacherId	<u>CHAR(8)</u>	<u>not null</u>
SchoolId	<u>CHAR(8)</u>	<u>not null</u>
Pre	VARCHAR2(10)	CHAR(8)
FirstNames	VARCHAR2(32)	CHAR(8)
LastName	VARCHAR2(32)	CHAR(8)
Suf	VARCHAR2(10)	CHAR(8)
InternalAddress	VARCHAR2(50)	CHAR(8)
TeachLCode	CHAR(1)	CHAR(8)
TeachLCDate	DATE	CHAR(8)
SchoolName	VARCHAR2(100)	CHAR(8)
AddressLine1	VARCHAR2(50)	CHAR(8)
AddressLine2	VARCHAR2(50)	CHAR(8)
City	VARCHAR2(30)	CHAR(8)
StateProvCode	VARCHAR2(5)	CHAR(8)
PostalCode	VARCHAR2(10)	CHAR(8)
CountryName	VARCHAR2(32)	CHAR(8)
LifeCycleCode	CHAR(1)	CHAR(8)
CycleChangeDate	DATE	CHAR(8)
AtmosCntYear	INTEGER	CHAR(8)
AtmosMonthsYear	VARCHAR2(200)	CHAR(8)
AtmosCntPrev	INTEGER	CHAR(8)
AtmosMonthsPrev	VARCHAR2(200)	CHAR(8)
CloudsCntYear	INTEGER	CHAR(8)
CloudsMonthsYear	VARCHAR2(200)	CHAR(8)
CloudsCntPrev	INTEGER	CHAR(8)
CloudsMonthsPrev	VARCHAR2(200)	CHAR(8)
HydroCntYear	INTEGER	CHAR(8)
HydroMonthsYear	VARCHAR2(200)	CHAR(8)
HydroCntPrev	INTEGER	CHAR(8)
HydroMonthsPrev	VARCHAR2(200)	CHAR(8)
ClimateCntYear	INTEGER	CHAR(8)
ClimateMonthsYear	VARCHAR2(200)	CHAR(8)
ClimateCntPrev	INTEGER	CHAR(8)
ClimateMonthsPrev	VARCHAR2(200)	CHAR(8)
SoilMTCntYear	INTEGER	CHAR(8)
SoilMTMonthsYear	VARCHAR2(200)	CHAR(8)
SoilMTCntPrev	INTEGER	CHAR(8)
SoilMTMonthsPrev	VARCHAR2(200)	CHAR(8)
LcBioCntYear	INTEGER	CHAR(8)
LcBioMonthsYear	VARCHAR2(200)	CHAR(8)
LcBioCntPrev	INTEGER	CHAR(8)
LcBioMonthsPrev	VARCHAR2(200)	CHAR(8)
SoilCharCntYear	INTEGER	CHAR(8)
SoilCharMonthsYear	VARCHAR2(200)	CHAR(8)
SoilCharCntPrev	INTEGER	CHAR(8)
SoilCharMonthsPrev	VARCHAR2(200)	CHAR(8)
AdvAtmosCntYear	INTEGER	CHAR(8)
AdvAtmosMonthsYear	VARCHAR2(200)	CHAR(8)
AdvAtmosCntPrev	INTEGER	CHAR(8)
AdvAtmosMonthsPrev	VARCHAR2(200)	CHAR(8)
EarthSysCntYear	INTEGER	CHAR(8)
EarthSysMonthsYear	VARCHAR2(200)	CHAR(8)
EarthSysCntPrev	INTEGER	CHAR(8)
EarthSysMonthsPrev	VARCHAR2(200)	CHAR(8)
PanGlobeCntYear	INTEGER	CHAR(8)
PanGlobeMonthsYear	VARCHAR2(200)	CHAR(8)
PanGlobeCntPrev	INTEGER	CHAR(8)
PanGlobeMonthsPrev	VARCHAR2(200)	CHAR(8)
NewRung	INTEGER	CHAR(8)
OldRung	INTEGER	CHAR(8)
FirstObs	DATE	CHAR(8)
LastObs	DATE	CHAR(8)
TotalObs	INTEGER	CHAR(8)
ObsMonths	INTEGER	CHAR(8)
ObsRate	INTEGER	CHAR(8)
AllCnt	INTEGER	CHAR(8)
AllYearCnt	INTEGER	CHAR(8)
AllNewCnt	INTEGER	CHAR(8)
AllPrevCnt	INTEGER	CHAR(8)

The three Certmerge tables identify schools that should receive Honor Roll letters in the April mailing each year. This mailing is usually done just after the 10th day of the month.

The two views listed below identify the text for certificates to be included in the Honor Roll letters. The "April" view identifies all certificates for the past year and the "Prev" view identifies all new or revised certificates for previous years.

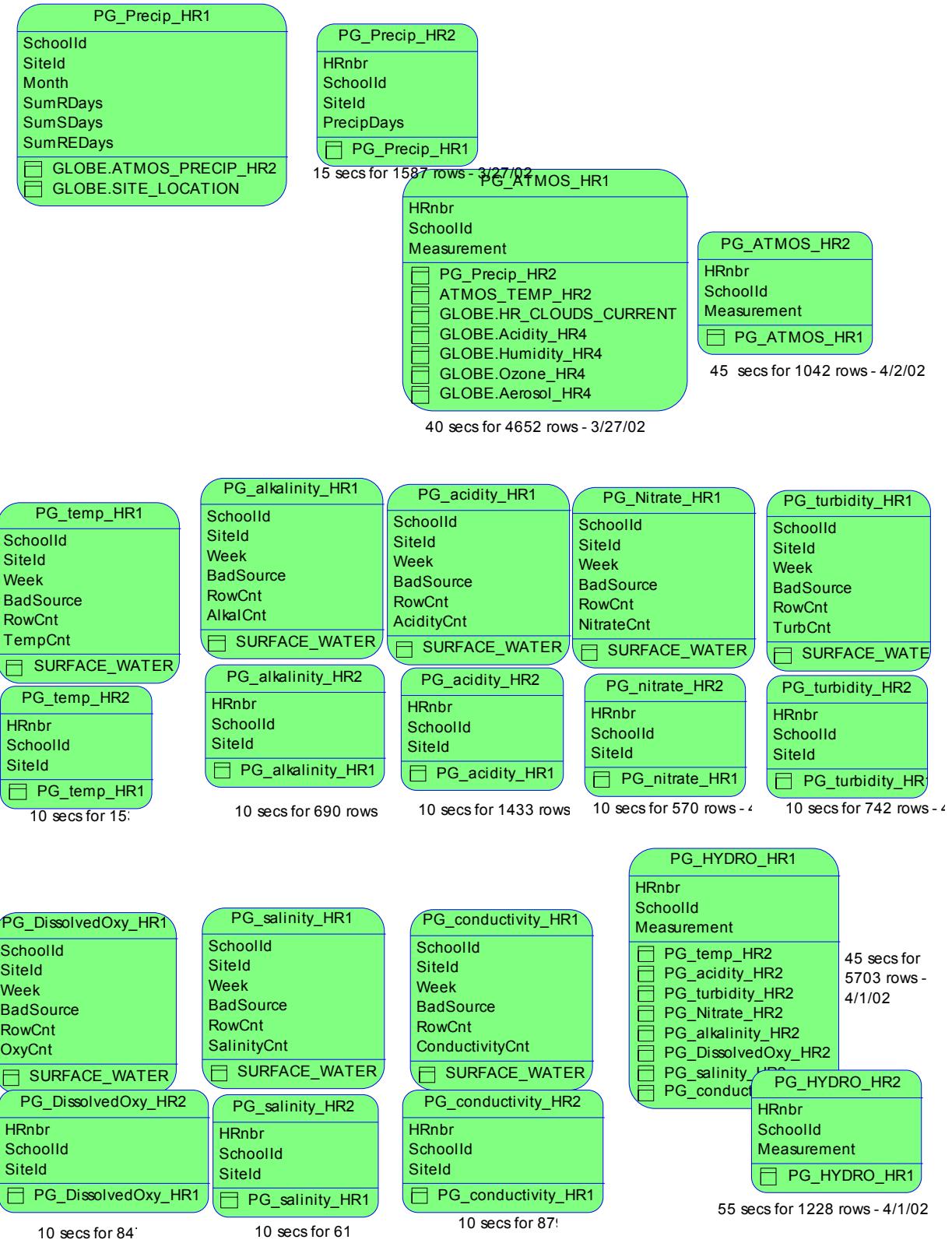
HR_CERTIFICATES_APRL		
"SchoolId"		
"SchoolName"		
"CertNbr"		
"HonorRoll"		
"NbrNew"		
"AllCertMonths"		
<input type="checkbox"/> GLOBE.GLOBE_SCHOOL		
<input type="checkbox"/> GLOBE.HR_CATEGORIES_ALL		
<input type="checkbox"/> GLOBE.HR_CATEGORIES_DISTINC		
<input type="checkbox"/> X		

HR_CERTIFICATES_PREV		
"SchoolId"		
"SchoolName"		
"CertNbr"		
"HonorRoll"		
"NbrNew"		
"AllCertMonths"		
<input type="checkbox"/> HR_CATEGORIES_CERT_MONTHS		
<input type="checkbox"/> CERTMERGE_DIRECTOR		

23 Diagram of Honor Roll _ Pan GLOBE

Honor Roll - Pan GLOBE

Under development

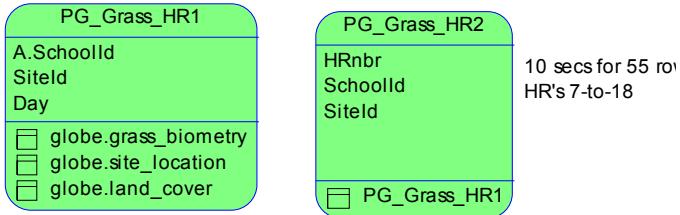


Physical Data Model

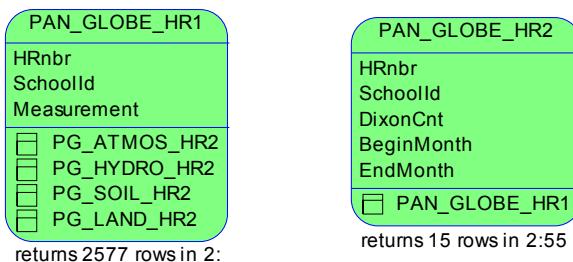
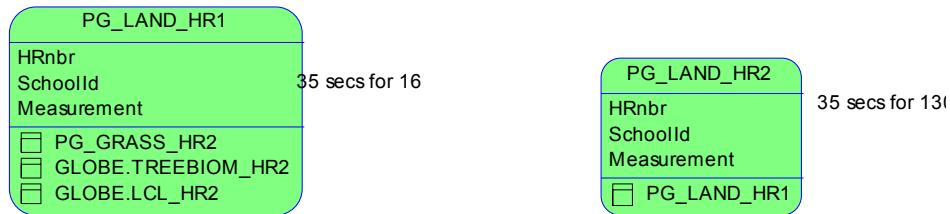
GLOBE Data Architecture



Spill over from preceding page



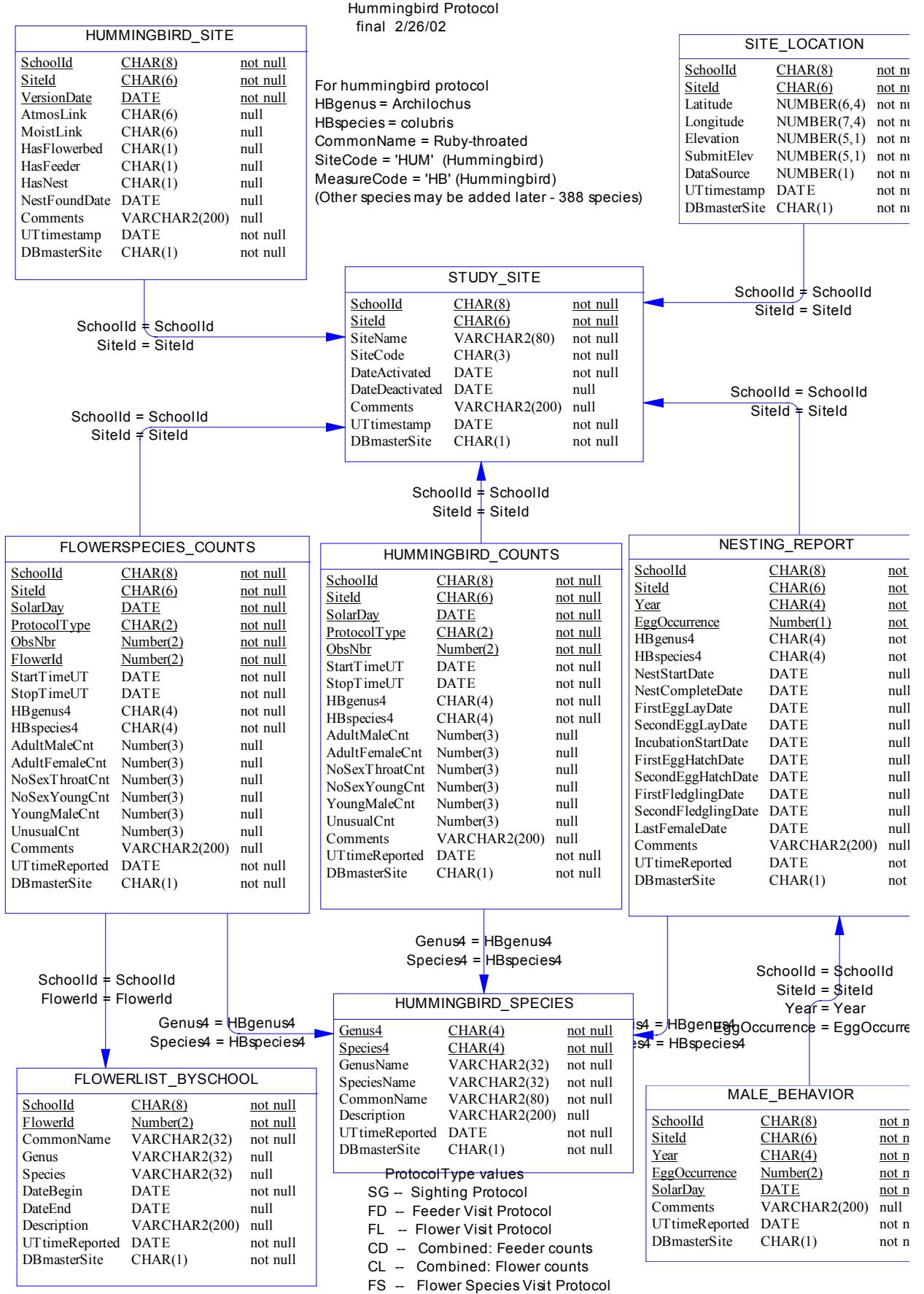
May still need to combine Grass and Trees as one study by doing a join in



HR_PANGLOBE_CURRENT		
HRnbr	INTEGER	not null
SchoolId	CHAR(8)	not null
DixonCnt	INTEGER	not null
BeginMonth	DATE	not null
EndMonth	DATE	not null

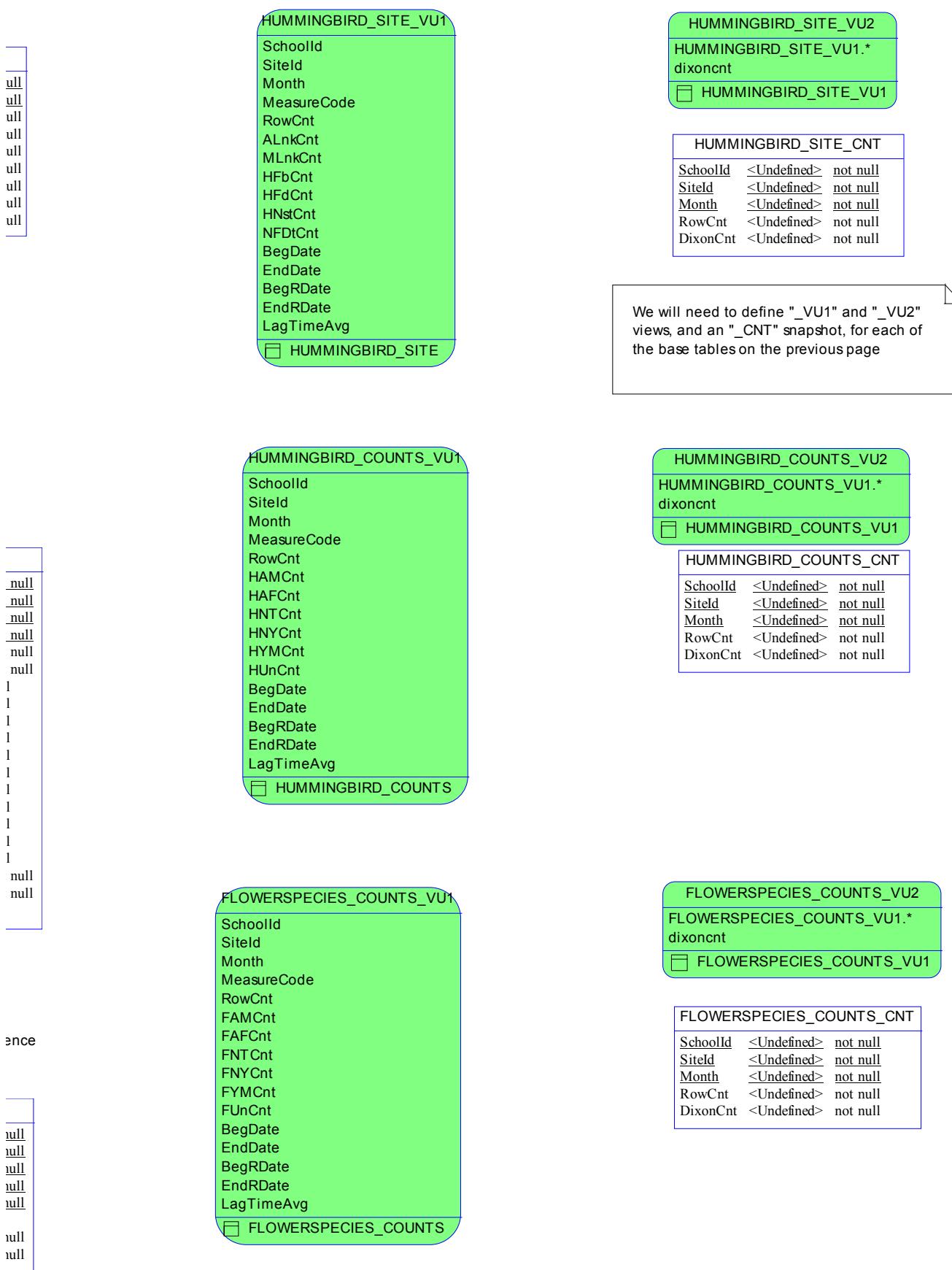
HR_PANGLOBE_PREVIOUS		
HRnbr	INTEGER	not null
SchoolId	CHAR(8)	not null
DixonCnt	INTEGER	not null
BeginMonth	DATE	not null
EndMonth	DATE	not null

24 Diagram of Hummingbird

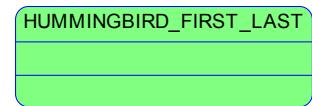


Physical Data Model

GLOBE Data Architecture



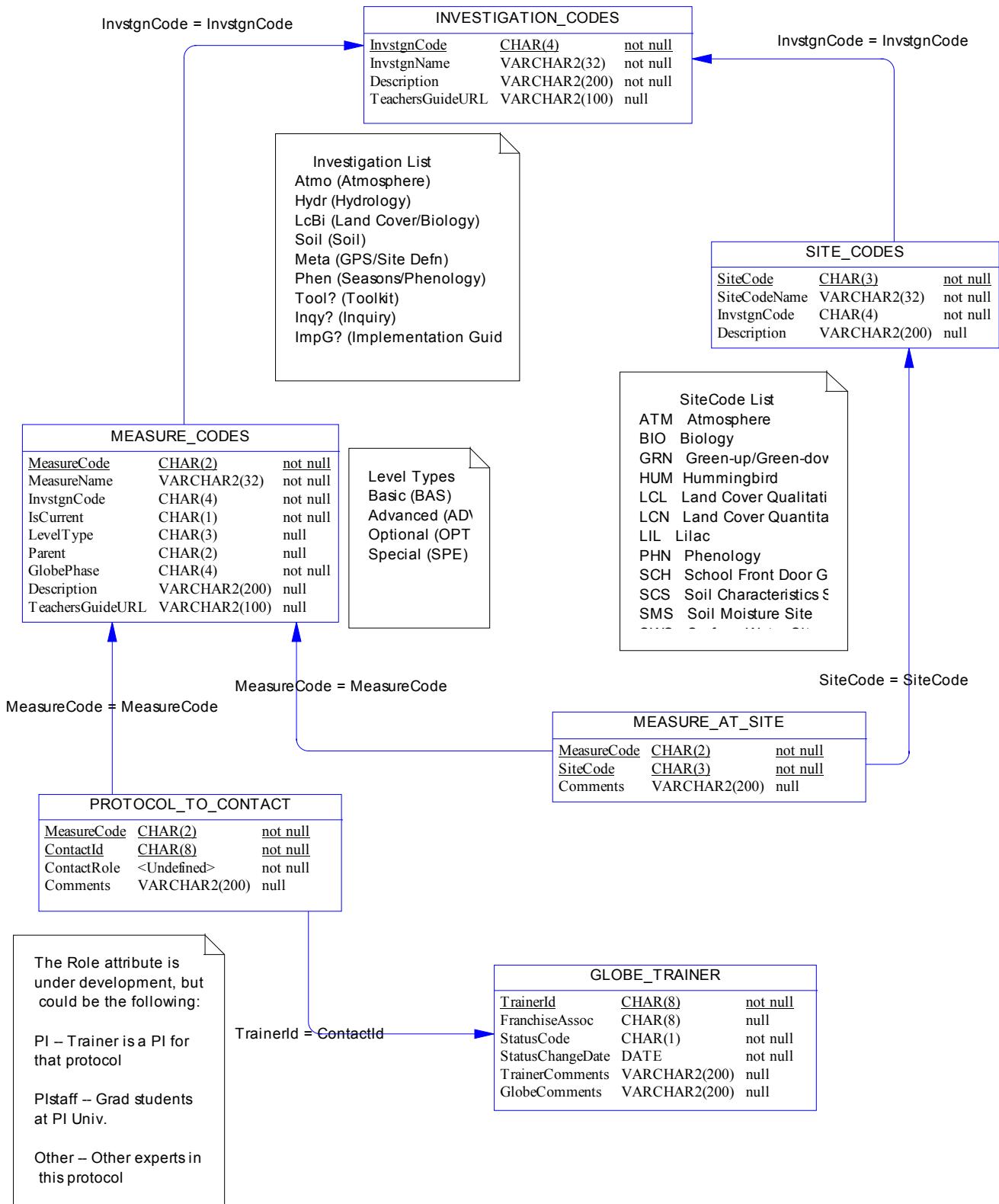
These view definitions have not yet been done – 2/26/2002
The intent is to find frequencies and first/last visits by geographic regions based on Latitude and Longitude



25 Diagram of Investigations

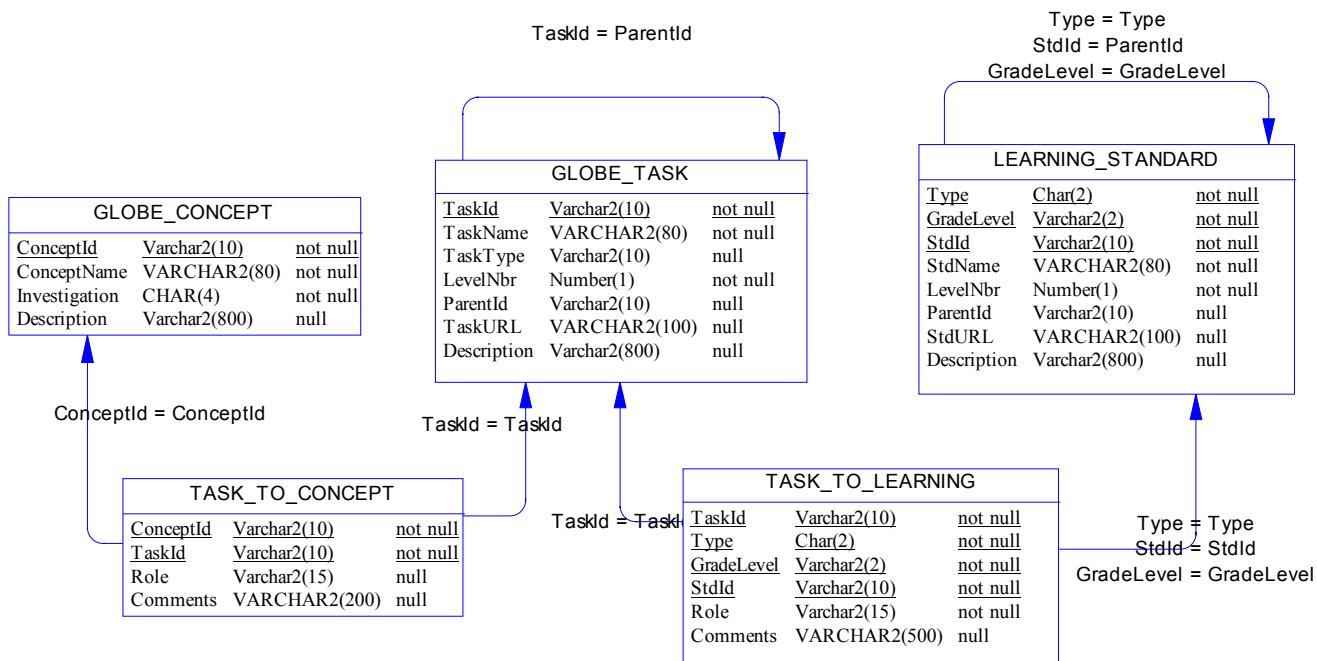
Investigations

Draft - Jan 22, 2002



26 Diagram of Learning Standards

Mapping GLOBE Tasks to Learning Standards
draft Summer 2001



Task Level

By convention, we could agree that all GLOBE Investigations are described as Level 0 tasks, that all GLOBE Protocols are Level 1 tasks under an Investigation, that the major Learning Activities are Level 1 tasks under an Investigation, and that all other tasks are directly part of a Protocol, or Learning Activity, or part of another parent task.

Role Categories

- Full – The task fully satisfies the standard.
- Partial – The task satisfies a portion of the standard.
- Exact – The task matches the standard exactly.
- Related – The task is peripherally related to the standard.

Usage

The Type attribute in Learning_Standard identifies either "US" for national standards or is a 2-character code for state standards. The StdId attribute identifies a specific standard, e.g. Type='US' and StdId='NSES' identifies the root level (i.e. LevelNbr=0) of the National Science Education Standards.

If the ParentId attribute is Null, then the standard is the root node of a learning standards hierarchy.

The Level attribute is derived from the level in the hierarchy of tasks or standards. If a specific standard is at level n then its parent must be at level n-1.

Rule 1: If a task fully satisfies a standard, then the task fully satisfies every child of that standard.

Rule 2: If a task partially satisfies a standard, then the task partially satisfies the parent of that standard.

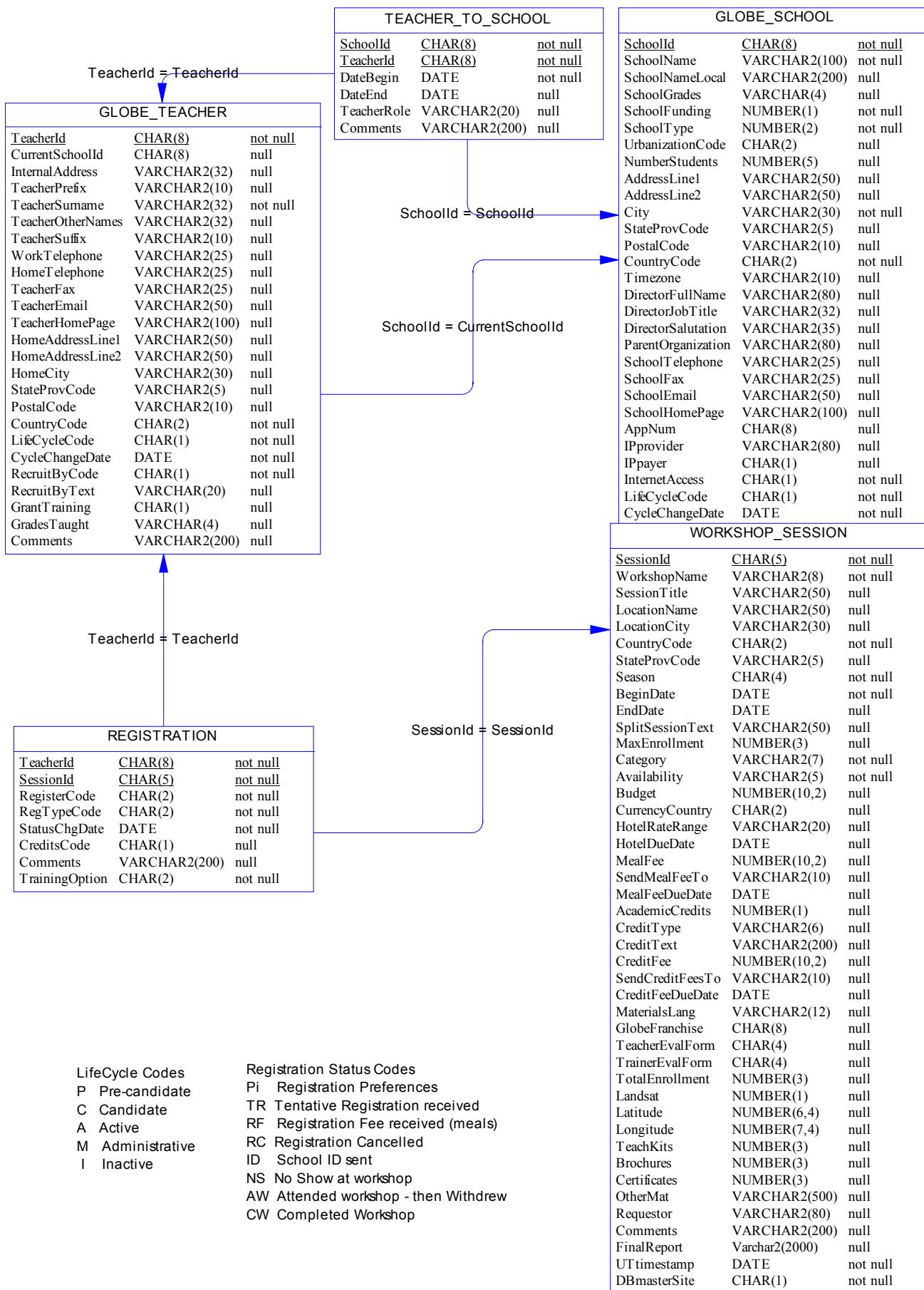
Rule 3: If a task matches a standard exactly, then the task matches the parent of that standard partially and matches every child of that standard fully.

Rule 4: If a task is related to a standard, then the task is related to the parent of that standard.

NOTE: Initial development as of October 2001 does NOT include hierarchies of tasks or standards. Thus no need for TaskLevel attributes or Role attributes or the Rules identified above.

27 Diagram of LifeCycleRegistration Codes

Physical Data Model



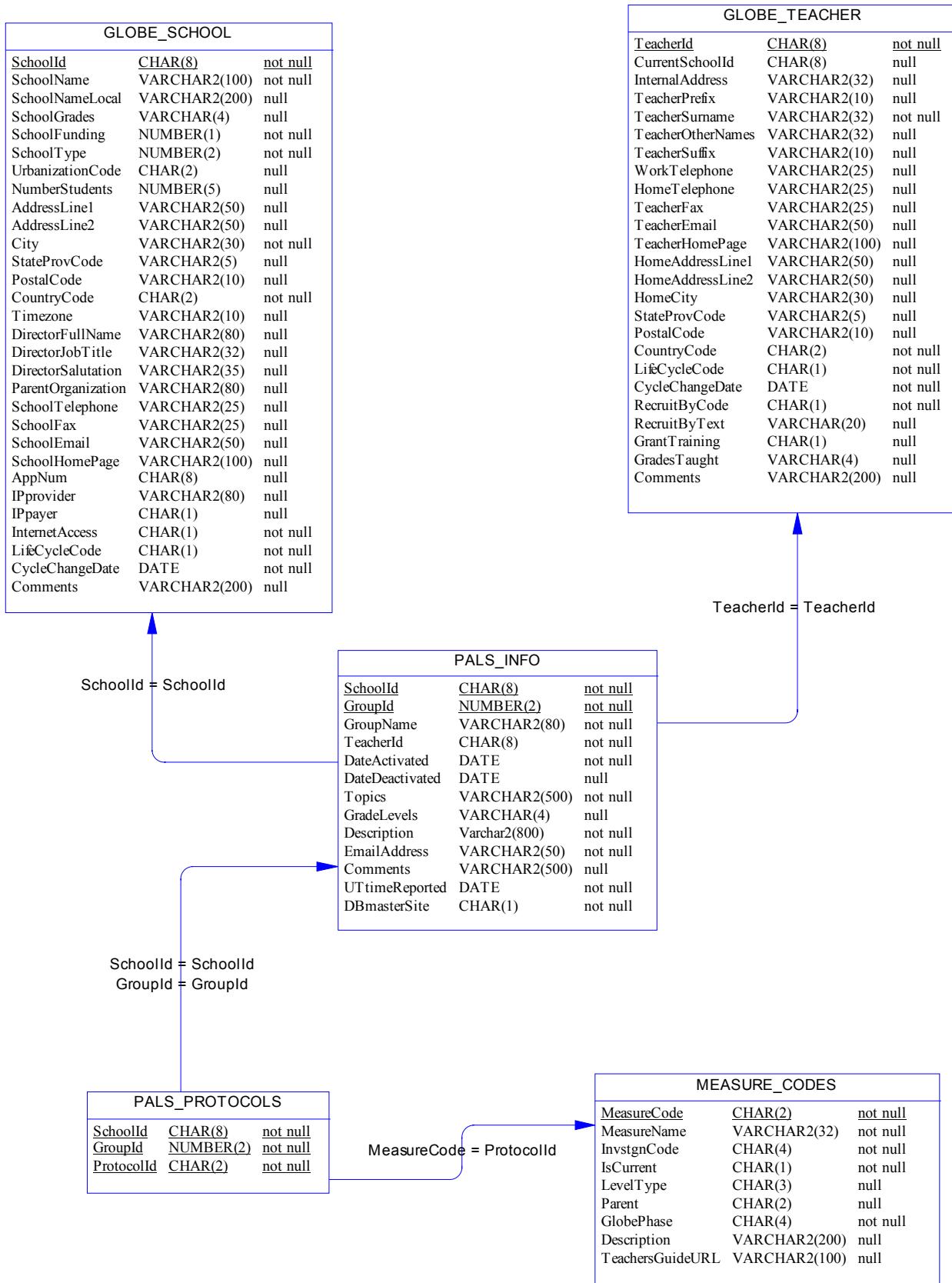
GLOBE Data Architecture

GLOBE_SCHOOL		
SchooldId	CHAR(8)	not null
SchoolName	VARCHAR2(100)	not null
SchoolNameLocal	VARCHAR2(200)	null
SchoolGrades	VARCHAR(4)	null
SchoolFunding	NUMBER(1)	not null
SchoolType	NUMBER(2)	not null
UrbanizationCode	CHAR(2)	null
NumberStudents	NUMBER(5)	null
AddressLine1	VARCHAR2(50)	null
AddressLine2	VARCHAR2(50)	null
City	VARCHAR2(30)	not null
StateProvCode	VARCHAR2(5)	null
PostalCode	VARCHAR2(10)	null
CountryCode	CHAR(2)	not null
Timezone	VARCHAR2(10)	null
DirectorFullName	VARCHAR2(80)	null
DirectorJobTitle	VARCHAR2(32)	null
DirectorSalutation	VARCHAR2(35)	null
ParentOrganization	VARCHAR2(80)	null
SchoolTelephone	VARCHAR2(25)	null
SchoolFax	VARCHAR2(25)	null
SchoolEmail	VARCHAR2(50)	null
SchoolHomePage	VARCHAR2(100)	null
AppNum	CHAR(8)	null
IPprovider	VARCHAR2(80)	null
IPpayer	CHAR(1)	null
InternetAccess	CHAR(1)	not null
LifeCycleCode	CHAR(1)	not null
CycleChangeDate	DATE	not null

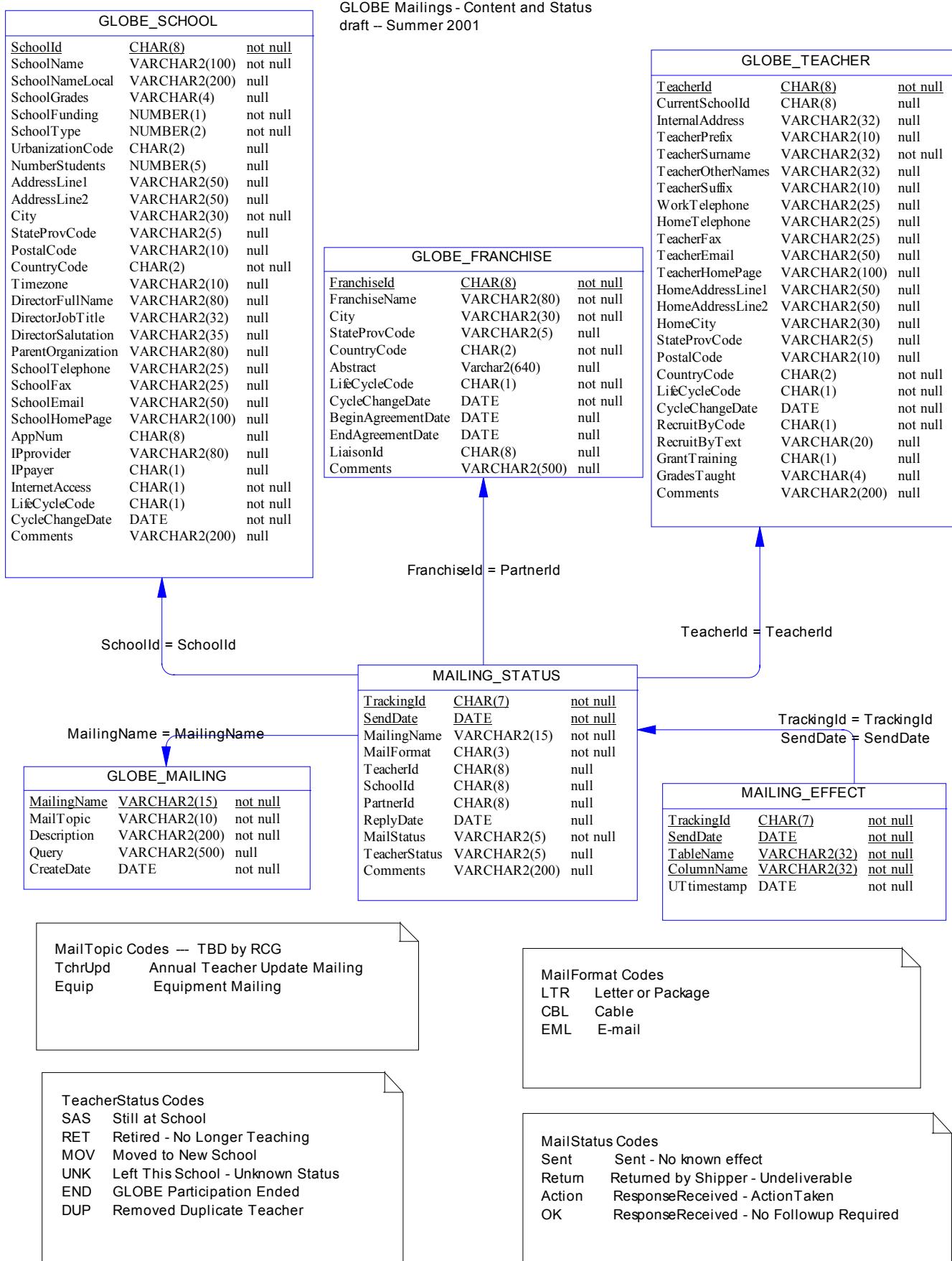
WORKSHOP_SESSION		
SessionId	CHAR(5)	not null
WorkshopName	VARCHAR2(8)	not null
SessionTitle	VARCHAR2(50)	null
LocationName	VARCHAR2(50)	null
LocationCity	VARCHAR2(30)	null
CountryCode	CHAR(2)	not null
StateProvCode	VARCHAR2(5)	null
Season	CHAR(4)	not null
BeginDate	DATE	not null
EndDate	DATE	null
SplitSessionText	VARCHAR2(50)	null
MaxEnrollment	NUMBER(3)	null
Category	VARCHAR2(7)	not null
Availability	VARCHAR2(5)	not null
Budget	NUMBER(10,2)	null
CurrencyCountry	CHAR(2)	null
HotelRateRange	VARCHAR2(20)	null
HotelDueDate	DATE	null
MealFee	NUMBER(10,2)	null
SendMealFeeTo	VARCHAR2(10)	null
MealFeeDueDate	DATE	null
AcademicCredits	NUMBER(1)	null
CreditType	VARCHAR2(6)	null
CreditText	VARCHAR2(200)	null
CreditFee	NUMBER(10,2)	null
SendCreditFeesTo	VARCHAR2(10)	null
CreditFeeDueDate	DATE	null
MaterialsLang	VARCHAR2(12)	null
GlobeFranchise	CHAR(8)	null
TeacherEvalForm	CHAR(4)	null
TrainerEvalForm	CHAR(4)	null
TotalEnrollment	NUMBER(3)	null
Landsat	NUMBER(1)	null
Latitude	NUMBER(6,4)	null
Longitude	NUMBER(7,4)	null
TeachKits	NUMBER(3)	null
Brochures	NUMBER(3)	null
Certificates	NUMBER(3)	null
OtherMat	VARCHAR2(500)	null
Requestor	VARCHAR2(80)	null
Comments	VARCHAR2(200)	null
FinalReport	Varchar2(2000)	null
UTtimestamp	DATE	not null
DBmasterSite	CHAR(1)	not null

28 Diagram of Mail Pals

GLOBE Mail Pals



29 Diagram of Mailing Status



30 Diagram of Misc Code Tables

DATA_ENTRY_OPTIONS		
PARAMNAME	VARCHAR2(20)	not null
LANGUAGE	CHAR(2)	not null
CODEVALUE	VARCHAR2(3)	not null
DESCRIPTION	VARCHAR2(60)	not null
PROTOCOL	VARCHAR2(25)	not null
DATEDEACTIVATED	DATE	null
COMMENTS	VARCHAR2(200)	null

INVESTIGATION_CODES		
InvstgnCode	CHAR(4)	not null
InvstgnName	VARCHAR2(32)	not null
Description	VARCHAR2(200)	not null
TeachersGuideURL	VARCHAR2(100)	null

SITE_CODES		
SiteCode	CHAR(3)	not null
SiteCodeName	VARCHAR2(32)	not null
InvstgnCode	CHAR(4)	not null
Description	VARCHAR2(200)	null

DB_MASTER_SITES		
DBmasterSite	CHAR(1)	not null
Global_Name	VARCHAR2(32)	not null
Location	VARCHAR2(32)	not null
Cycle	CHAR(4)	null

MEASURE_CODES		
MeasureCode	CHAR(2)	not null
MeasureName	VARCHAR2(32)	not null
InvstgnCode	CHAR(4)	not null
IsCurrent	CHAR(1)	not null
LevelType	CHAR(3)	null
Parent	CHAR(2)	null
GlobePhase	CHAR(4)	not null
Description	VARCHAR2(200)	null
TeachersGuideURL	VARCHAR2(100)	null

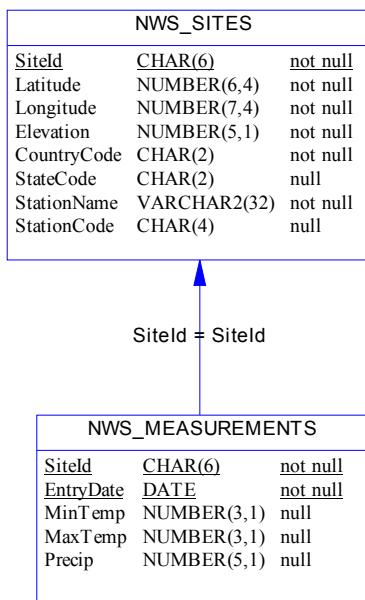
URBANIZATION_CODES		
UrbanizationCode	CHAR(2)	not null
UrbanizationName	VARCHAR2(80)	not null
Description	VARCHAR2(200)	not null
DescripFrench	VARCHAR2(200)	null
DescripSpanish	VARCHAR2(200)	null
DescripRussian	VARCHAR2(200)	null
DescripChinese	VARCHAR2(200)	null
DescripArabic	VARCHAR2(200)	null

SCHOOLGRADE_CODES		
GradeCode	CHAR(1)	not null
GradeName	VARCHAR2(80)	not null
Description	VARCHAR2(200)	not null
DescripFrench	VARCHAR2(200)	null
DescripSpanish	VARCHAR2(200)	null
DescripRussian	VARCHAR2(200)	null
DescripChinese	VARCHAR2(200)	null
DescripArabic	VARCHAR2(200)	null

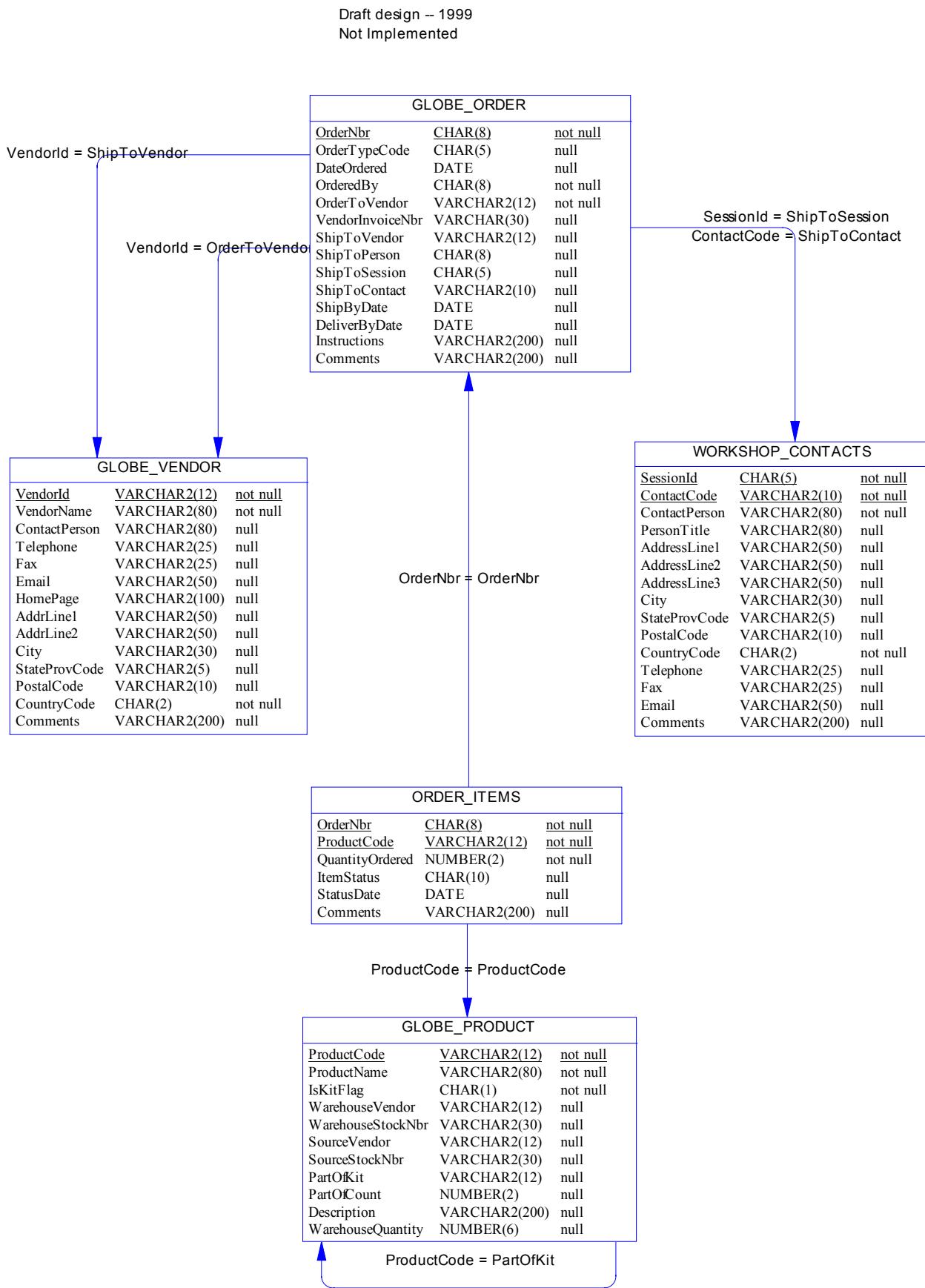
LANDCOVER_CODES		
MUCcode	VARCHAR(4)	not null
MUCname	VARCHAR2(100)	not null
ClassLevel	NUMBER(1)	not null
IsLeaf	CHAR(1)	not null
IsMeasurable	CHAR(1)	not null
Description	VARCHAR2(800)	null
DescripFrench	VARCHAR2(800)	null
DescripSpanish	VARCHAR2(800)	null
DescripRussian	VARCHAR2(800)	null
DescripChinese	VARCHAR2(800)	null
DescripArabic	VARCHAR2(800)	null

LIFECYCLE_CODES		
LifeCycleCode	CHAR(1)	not null
LifeCycleName	VARCHAR2(80)	not null
Description	VARCHAR2(200)	not null
DescripFrench	VARCHAR2(200)	null
DescripSpanish	VARCHAR2(200)	null
DescripRussian	VARCHAR2(200)	null
DescripChinese	VARCHAR2(200)	null
DescripArabic	VARCHAR2(200)	null

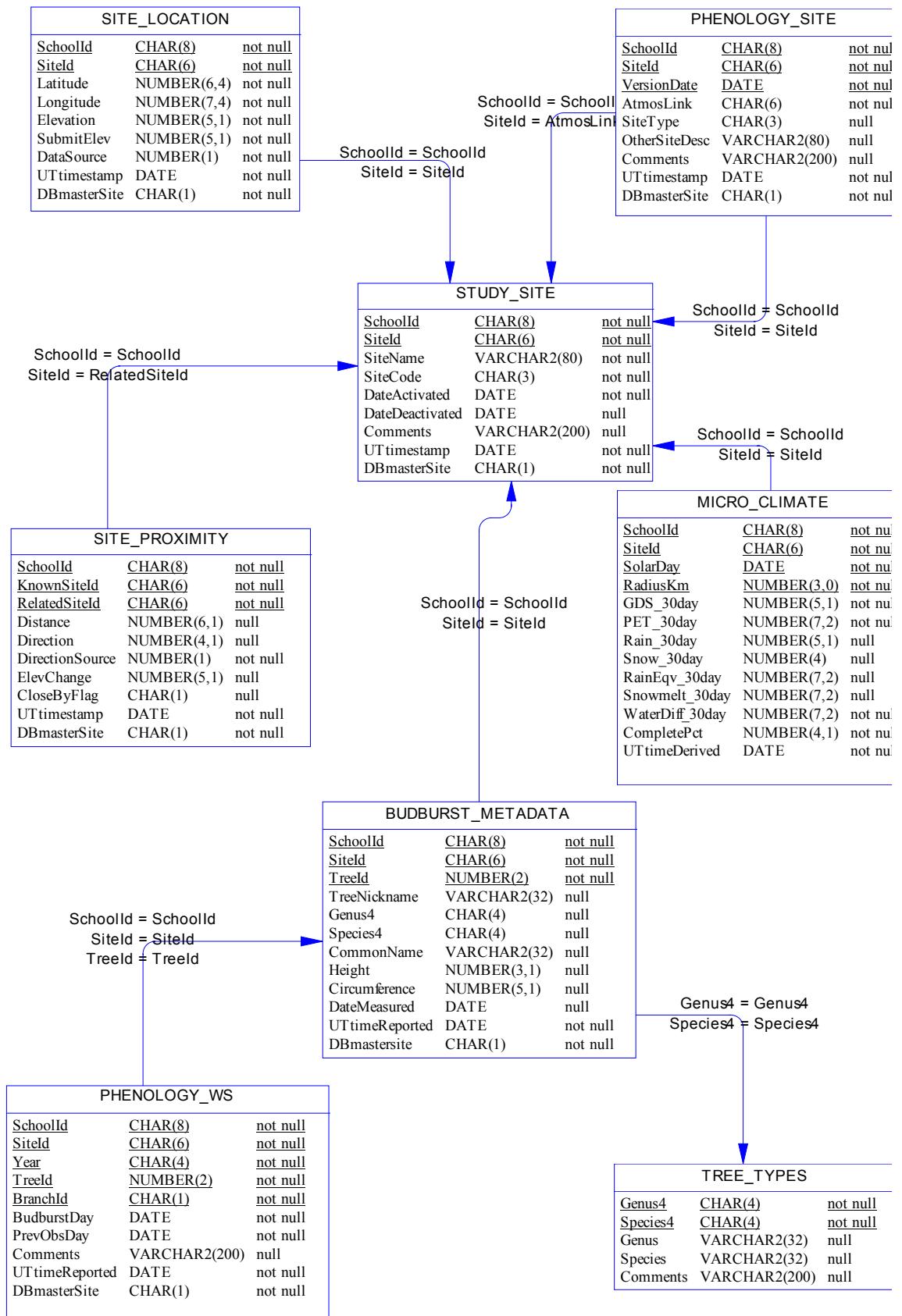
31 Diagram of NWS Reference Data

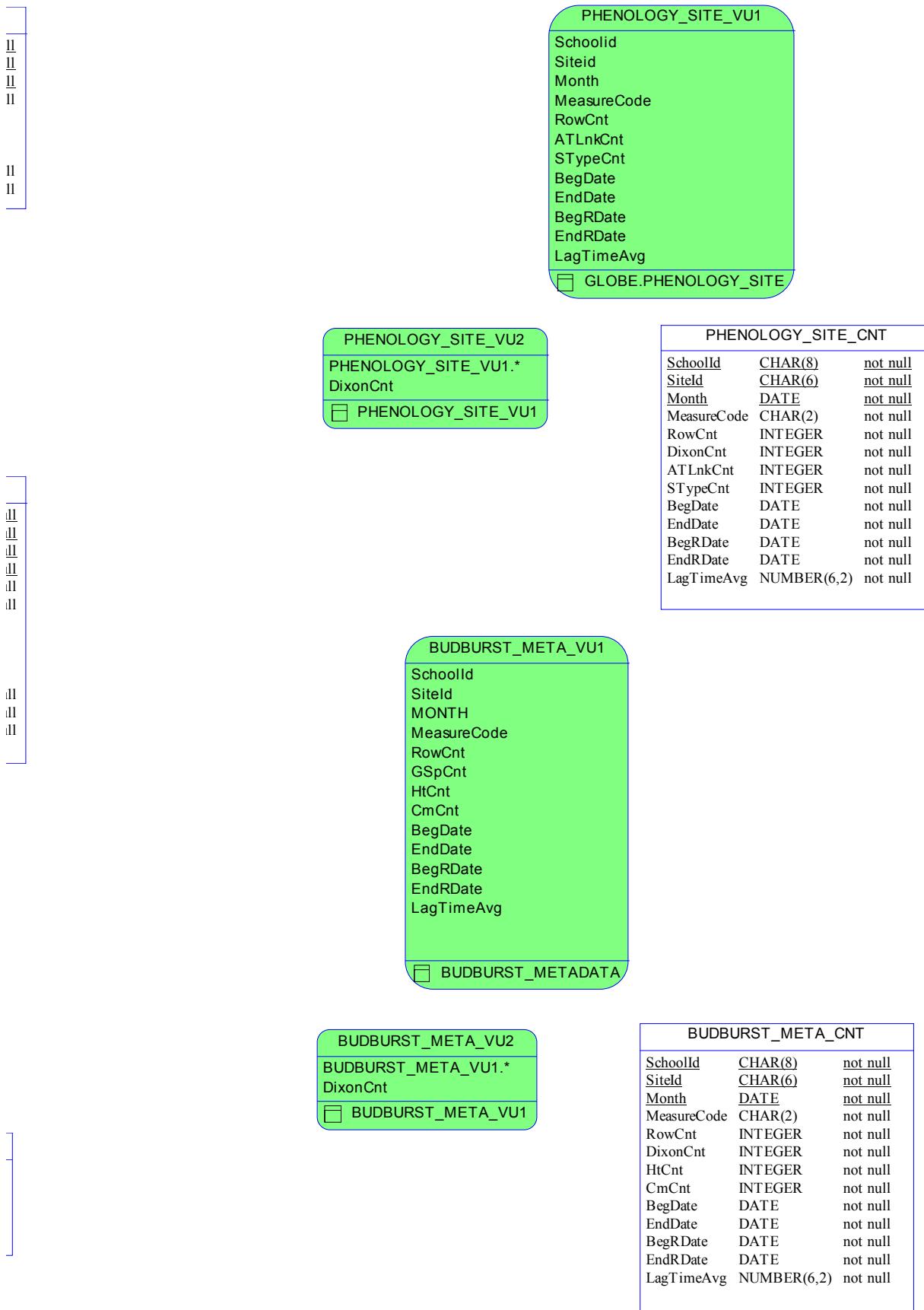


32 Diagram of OrderInventory



33 Diagram of Phenology_Budburst







PHENOLOGY_WS_CNT

SchoolId	CHAR(8)	not null
SiteId	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	INTEGER	not null
DixonCnt	INTEGER	not null
BBCnt	INTEGER	not null
POCnt	INTEGER	not null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	not null
EndRDate	DATE	not null
LagTimeAvg	NUMBER(6,2)	not null

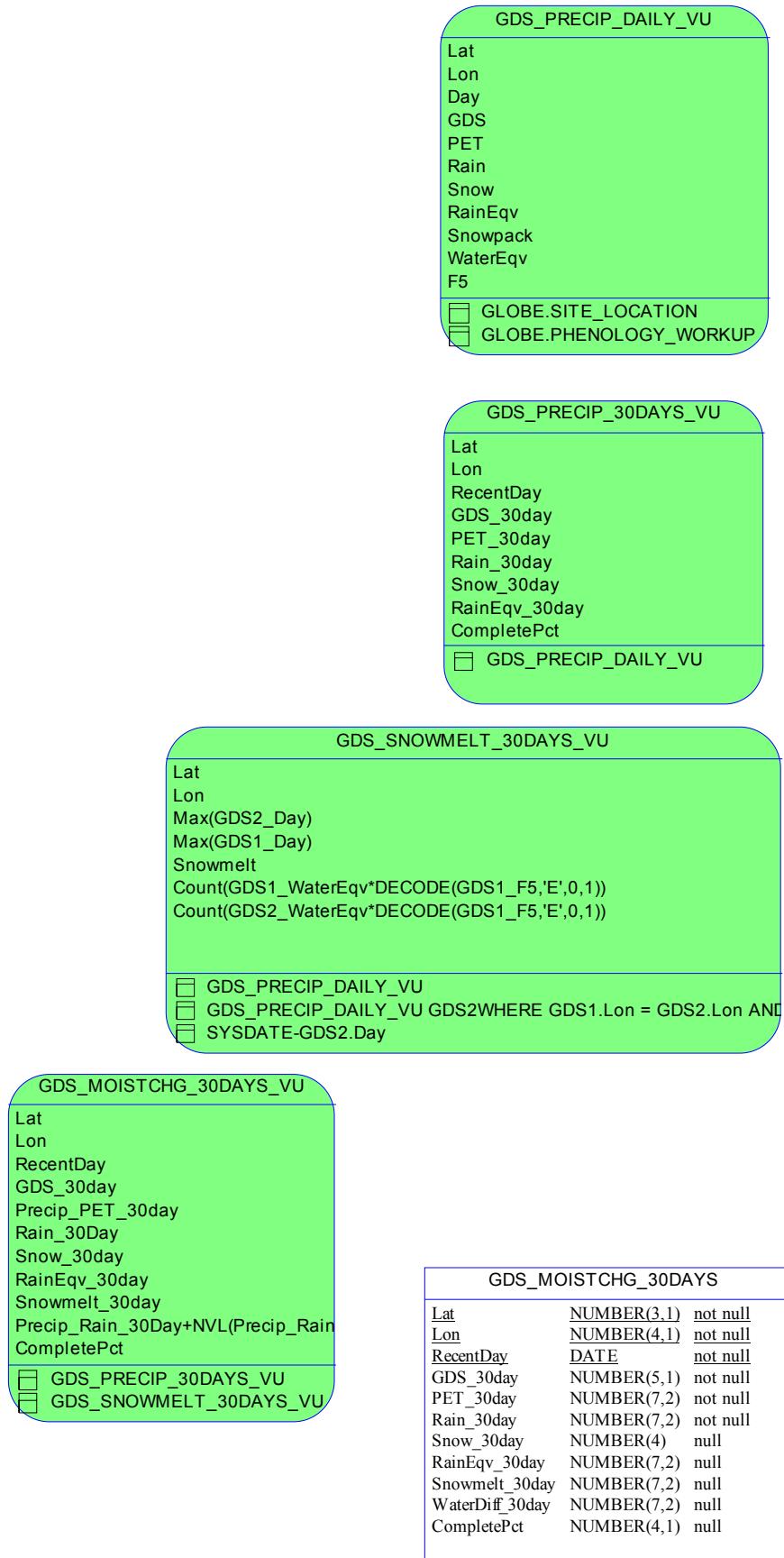
PRECIP_SOLID			PRECIP_RAIN		
SchoolId	CHAR(8)	not null	SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null	Siteld	CHAR(6)	not null
SolarDay	DATE	not null	SolarDay	DATE	not null
SolarHour	NUMBER(2)	not null	SolarHour	NUMBER(2)	not null
SolarMin	NUMBER(2)	null	SolarMin	NUMBER(2)	null
NewAmount	NUMBER(4)	null	RainAmount	NUMBER(5,1)	null
DailyTMAflag	CHAR(1)	null	DailyTMAFlag	CHAR(1)	null
RainEquivalent	NUMBER(5,1)	null	DaysAccumulated	NUMBER(2)	not null
RainEquivTMAflag	CHAR(1)	null	Acidity	NUMBER(3,1)	null
DaysAccumulated	NUMBER(2)	not null	AcidityMethod	NUMBER(1)	not null
CurrentDepth	NUMBER(4)	null	Comments	VARCHAR2(200)	null
TotalTMAflag	CHAR(1)	null	VisualDay	DATE	not null
WaterEquiv	NUMBER(5,1)	null	UTtimeMeasured	DATE	not null
WaterEquivTMAflag	CHAR(1)	null	UTtimeReported	DATE	not null
Acidity	NUMBER(3,1)	null	DBmasterSite	CHAR(1)	not null
AcidityMethod	NUMBER(1)	not null			
AciditySnowpack	NUMBER(3,1)	null			
Comments	VARCHAR2(200)	null			
VisualDay	DATE	not null			
UTtimeMeasured	DATE	not null			
UTtimeReported	DATE	not null			
DBmasterSite	CHAR(1)	not null			

PET_CHART			AIR_TEMP		
AvgTemp	NUMBER(3,1)	not null	SchoolId	CHAR(8)	not null
PETvalue	NUMBER(7,2)	not null	Siteld	CHAR(6)	not null
			SolarDay	DATE	not null
			SolarHour	NUMBER(2)	not null
			SolarMin	NUMBER(2)	null
			CurrentTemp	NUMBER(3,1)	null
			ThermomType	NUMBER(1)	null
			MaxTemp	NUMBER(3,1)	null
			MinTemp	NUMBER(3,1)	null
			Comments	VARCHAR2(200)	null
			VisualDay	DATE	not null
			UTtimeMeasured	DATE	not null
			UTtimeReported	DATE	not null
			DBmasterSite	CHAR(1)	not null

PHN_JoinThree_VU		
SchoolId		
Siteld		
SolarDay		
AvgTemp		
GDSvalue		
NewRain		
PRECIP_RAIN_DAILYTMAFL		
NewSnow		
PRECIP_SOLID_DAILYTMAF		
RainEquiv		
F3		
Snowpack		
F4		
WaterEquiv		
F5		
<input type="checkbox"/> GLOBE.AIR_TEMP		
<input type="checkbox"/> GLOBE.PRECIP_RAIN		
<input type="checkbox"/> GLOBE.PRECIP_SOLID		

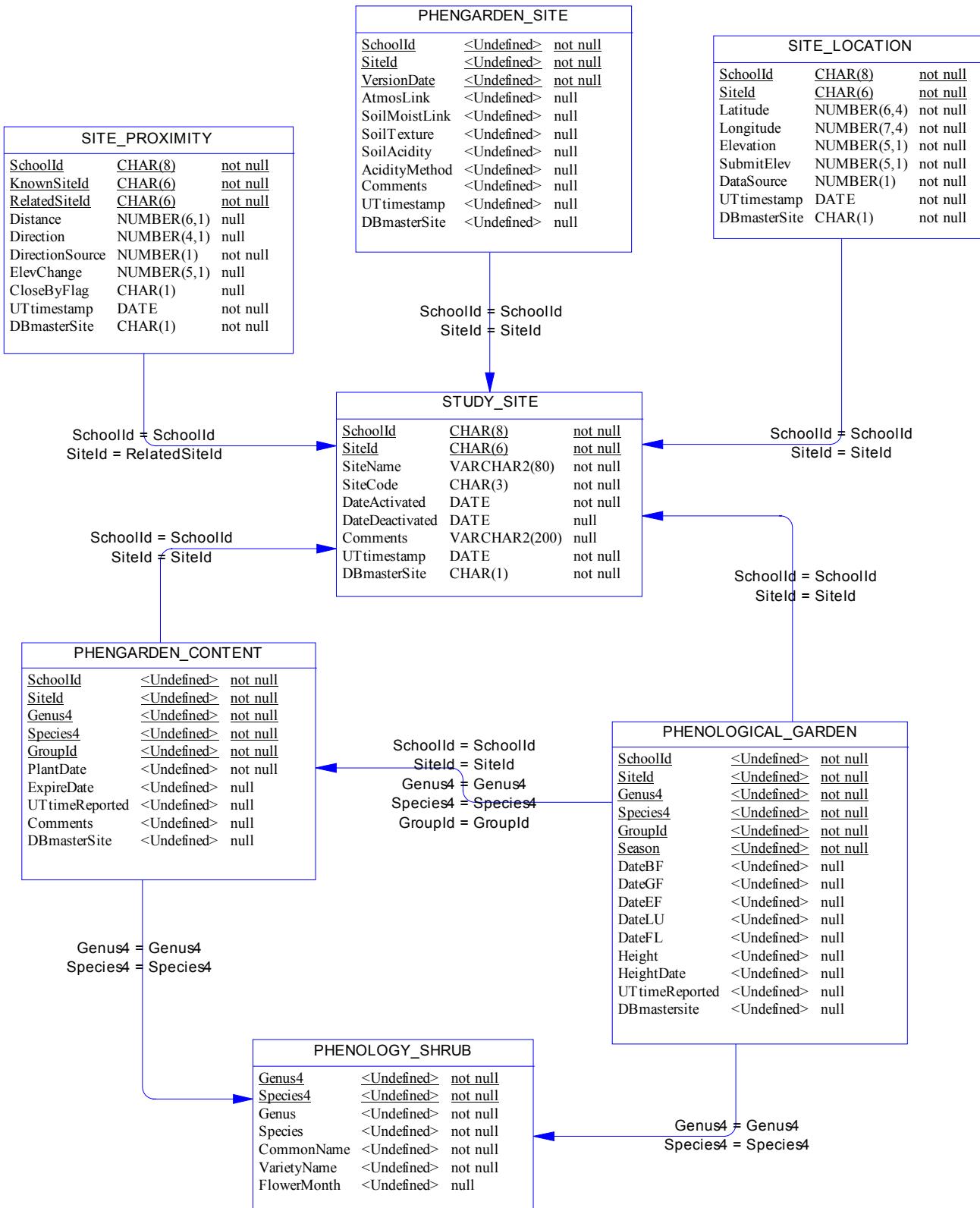
PHN_JoinFour_VU		
PHN_JoinThree_VU.*		
PETVALUE		
WaterDiff		
<input type="checkbox"/> PHN_JoinThree_VU		
<input type="checkbox"/> GLOBE.PET_CHART		

PHENOLOGY_WORKUP		
SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null
SolarDay	DATE	not null
AvgTemp	NUMBER(3,1)	not null
GDSvalue	NUMBER(5,1)	not null
PETvalue	NUMBER(7,2)	not null
NewRain	NUMBER(5,1)	null
F1	CHAR(1)	null
NewSnow	NUMBER(4)	null
F2	CHAR(1)	null
RainEquiv	NUMBER(5,1)	null
F3	CHAR(1)	null
Snowpack	NUMBER(4)	null
F4	CHAR(1)	null
WaterEquiv	NUMBER(5,1)	null
F5	CHAR(1)	null
WaterDiff	NUMBER(7,2)	null

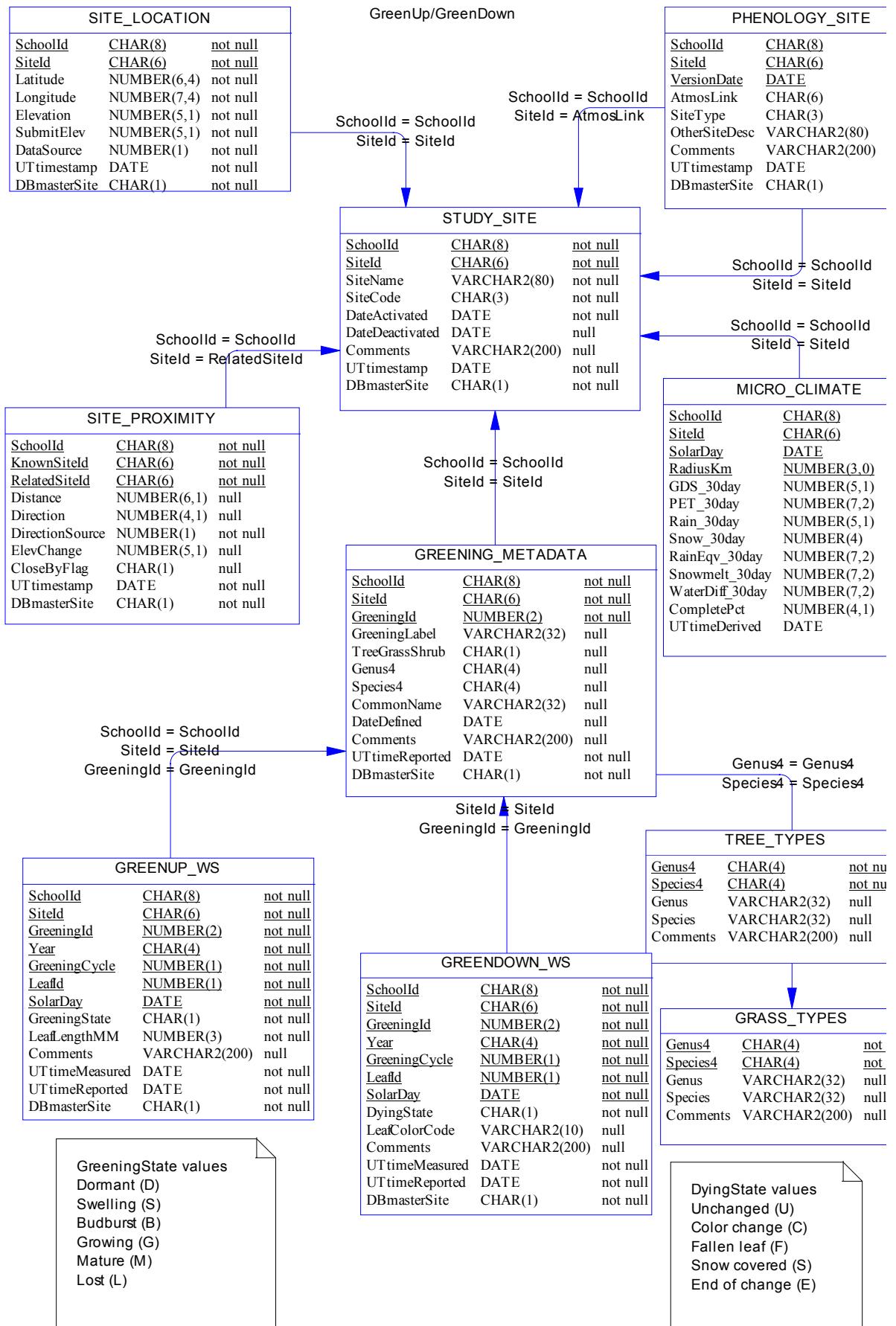


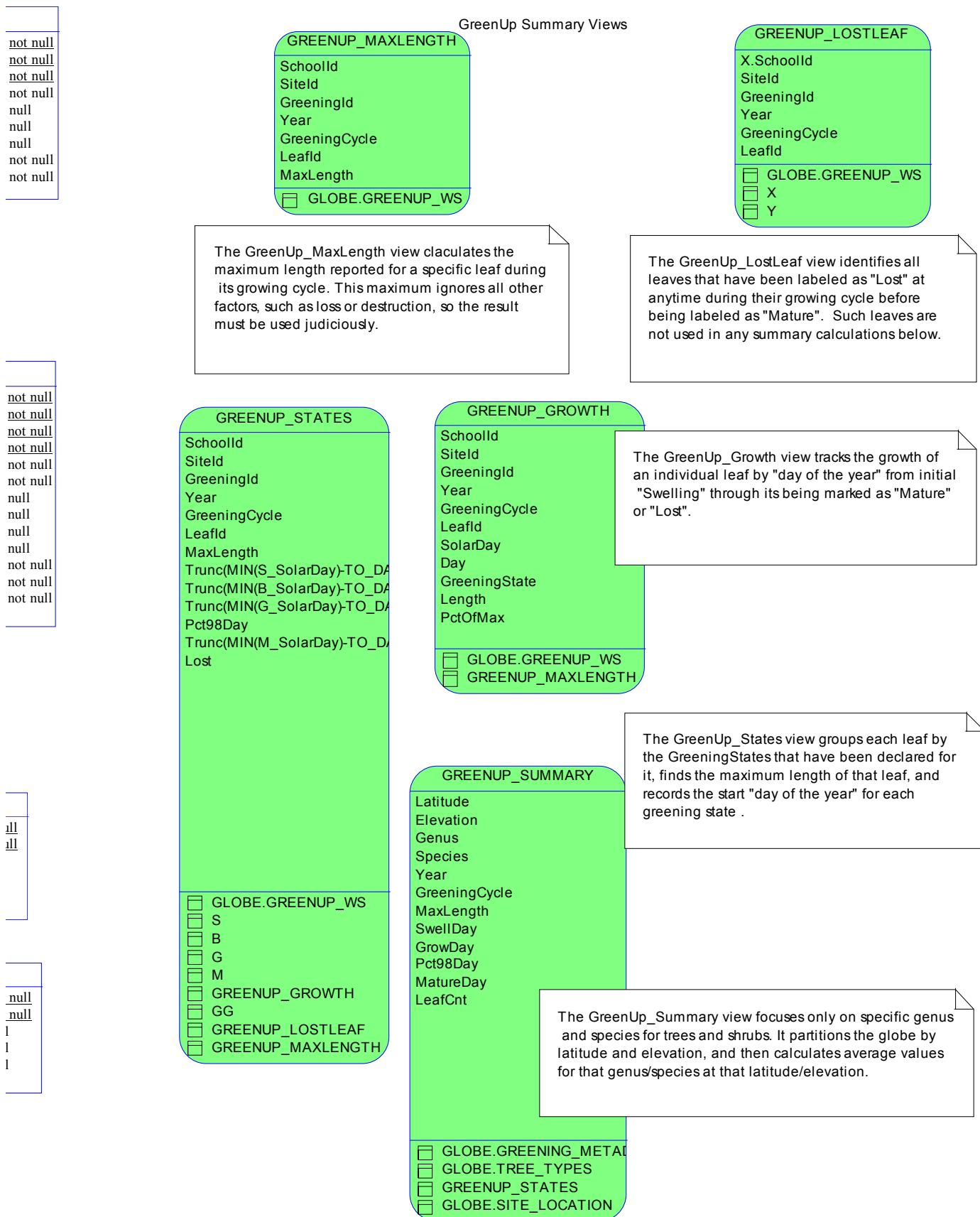
34 Diagram of Phenology_Garden

Phenological Gardens
Preliminary Design – May 20, 2002



35 Diagram of Phenology_Greening





GreenDown Summary Views

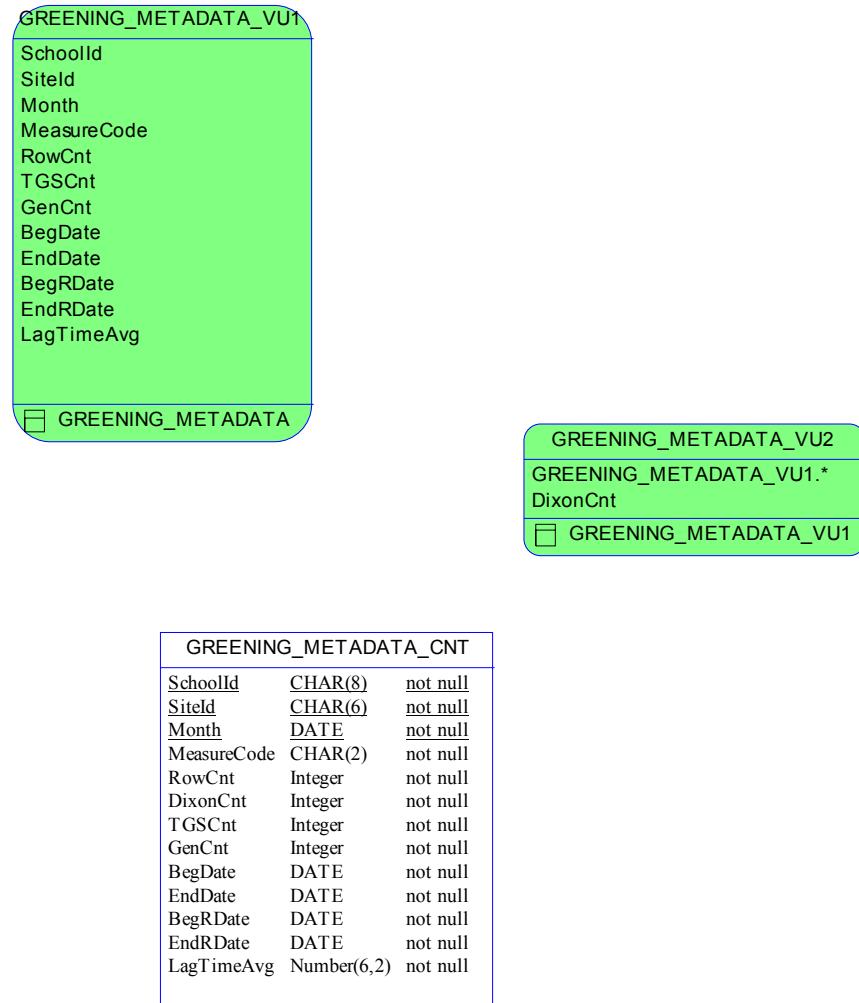


The GreenDown_FallenLeaf view identifies all leaves that have been labeled as "Fallen leaf" at anytime during their growing cycle before being labeled as "End of color change". Such leaves are not used in any summary calculations below.

The GreenDown_Color view tracks the color change of an individual leaf by "day of the year" from initial "Color change" through its being marked as "Fallen" or "End of color change".

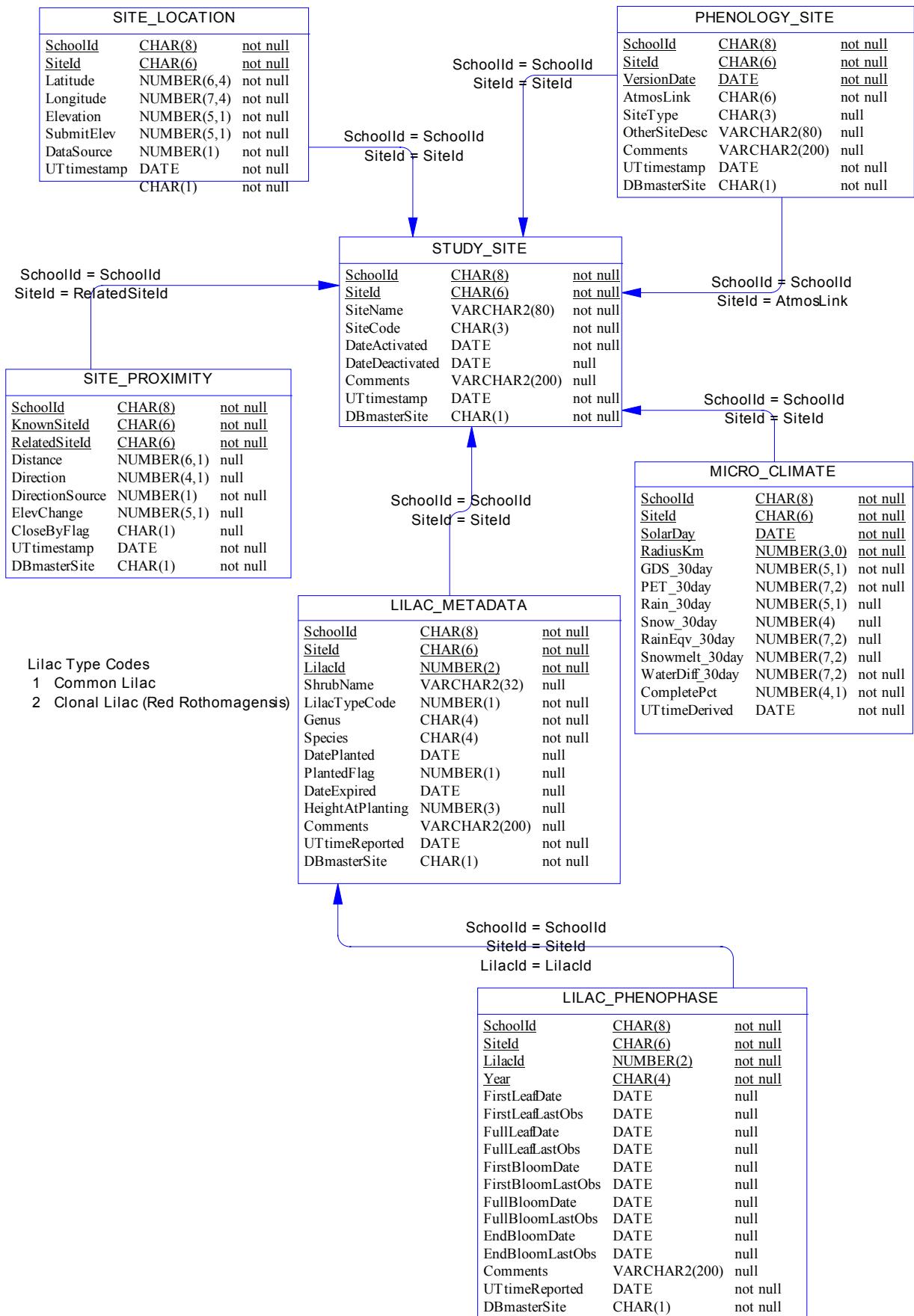
The GreenDown_States view groups each leaf by the DyingStates that have been declared for it and records the start "day of the year" for each dying state.

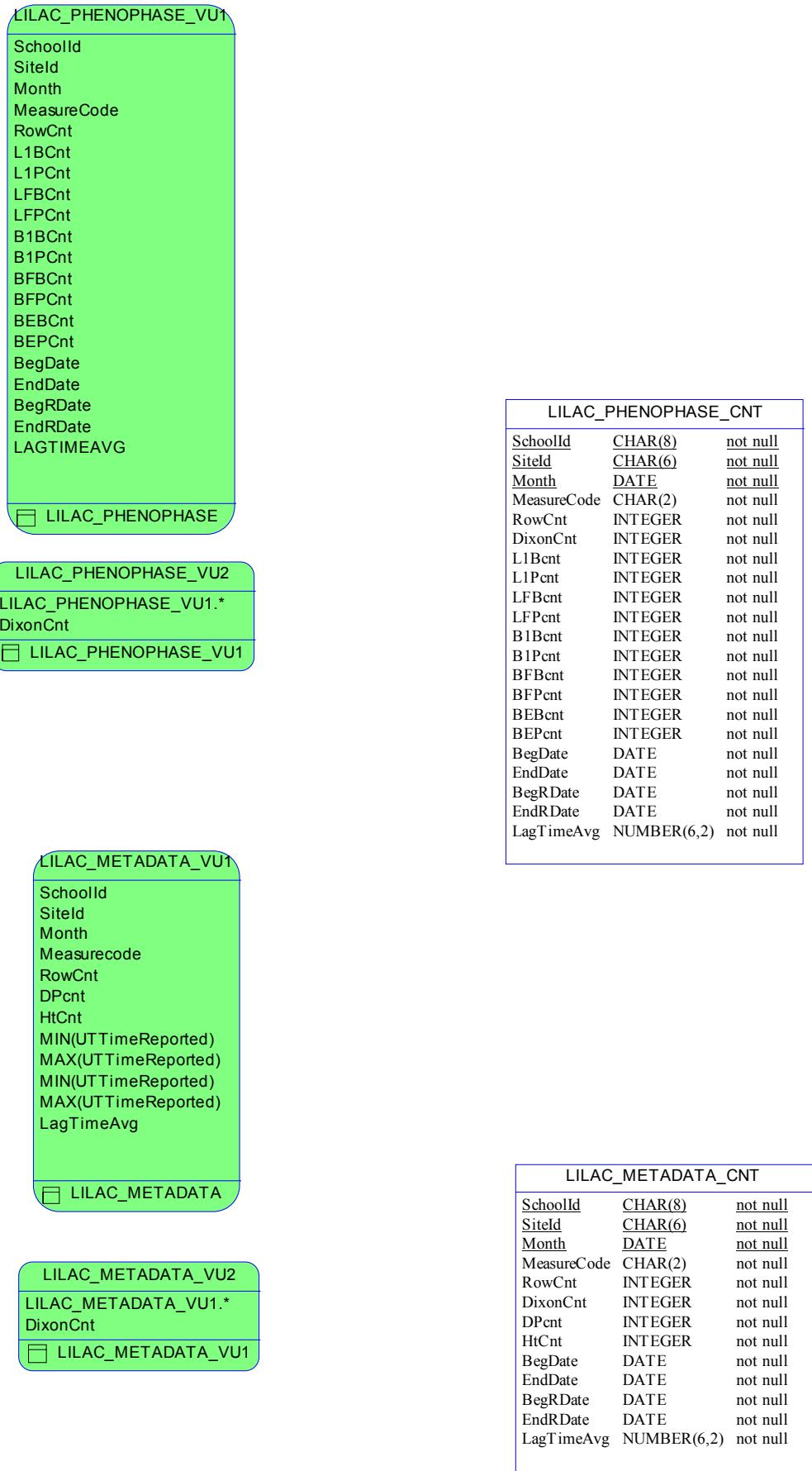
A list of the 24 colors used for leaf and grass colors in the GLOBE GreenUp and GreenDown protocols.

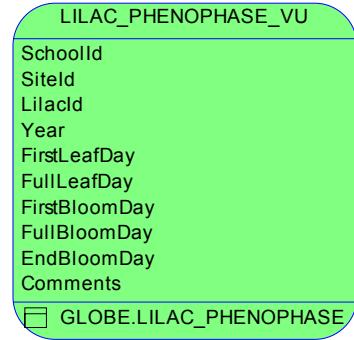




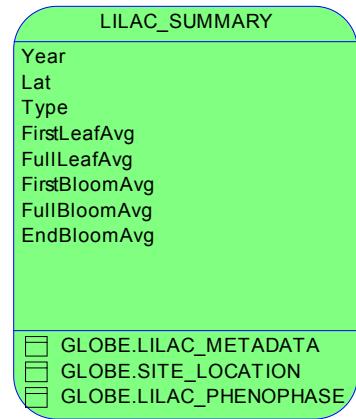
36 Diagram of Phenology_Lilacs







A view over LILAC_PHENOPHASE with phenophase Dates changed to DayOfYear.

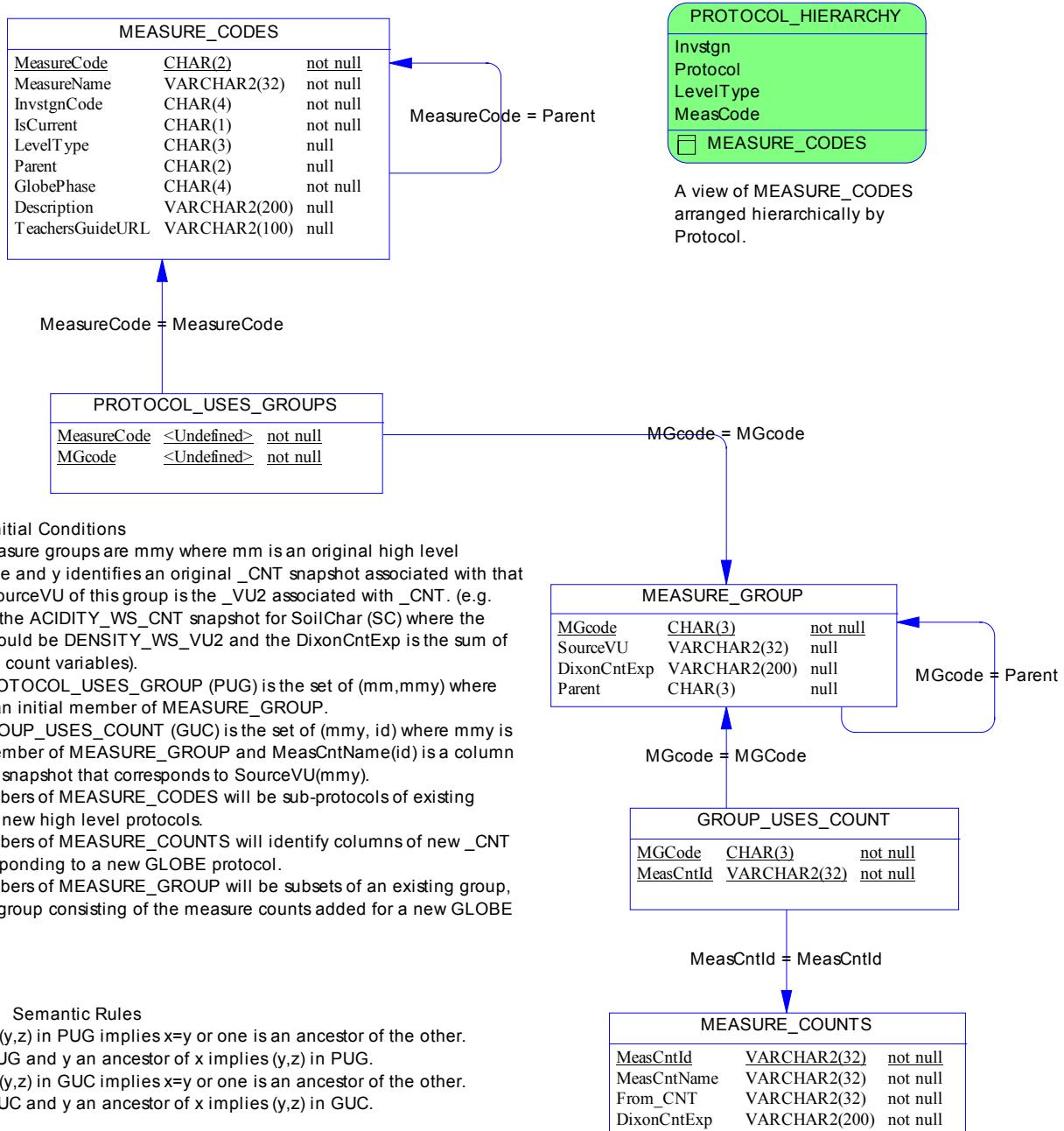


A summary view with phenophase averages over Latitudes rounded to degree.

37 Diagram of Protocol Measurement Count

Protocol Measurement Counts

Early Draft - February 21, 2002



Initial Conditions

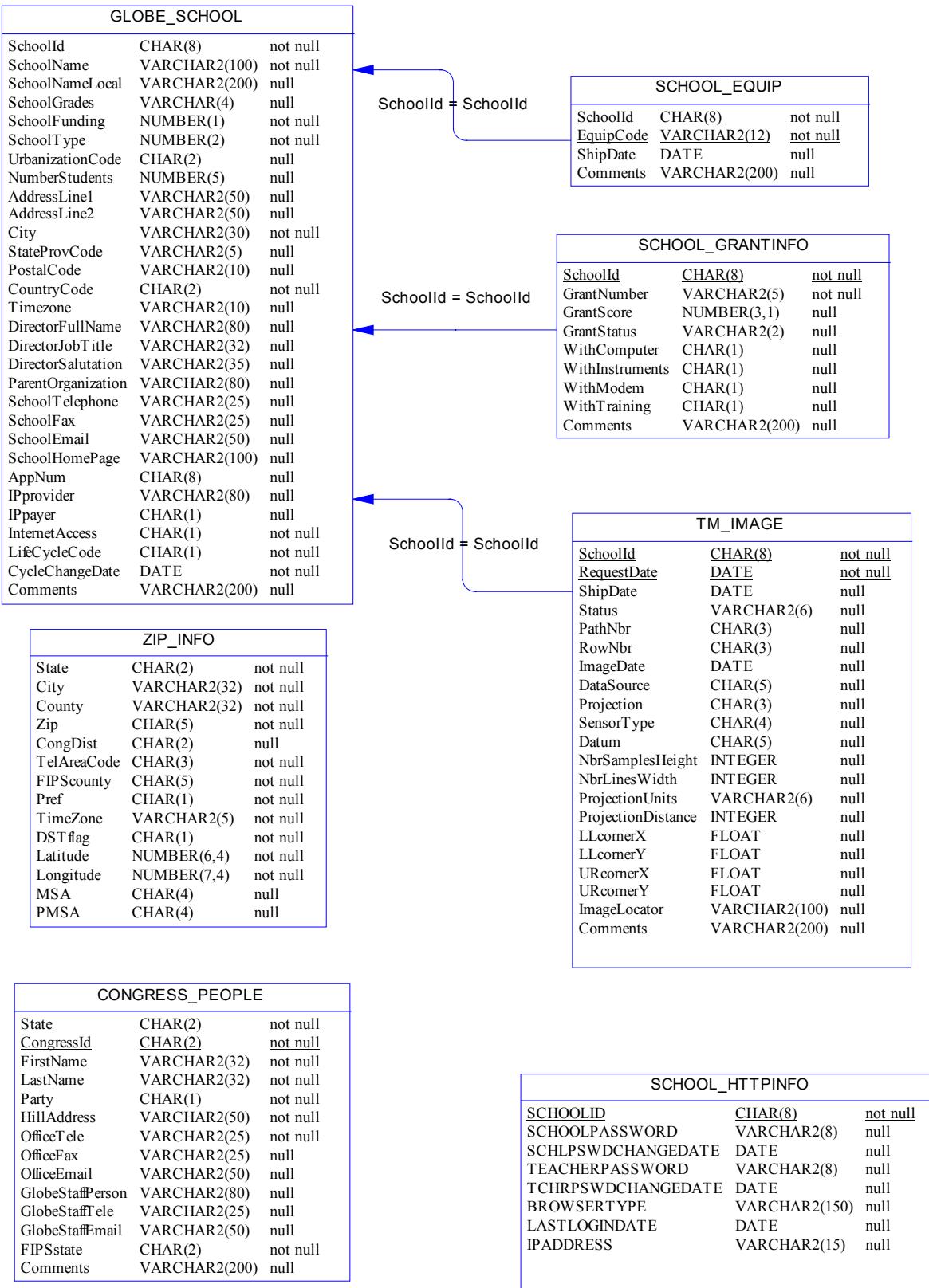
- 1) Initial measure groups are mmy where mm is an original high level MeasureCode and y identifies an original _CNT snapshot associated with that mm. The SourceVU of this group is the _VU2 associated with _CNT. (e.g. SCH is from the ACIDITY_WS_CNT snapshot for SoilChar (SC) where the SourceVU would be DENSITY_WS_VU2 and the DixonCntExp is the sum of two measure count variables).
- 2) Initial PROTOCOL_USES_GROUP (PUG) is the set of (mm,mmy) where the mmy is an initial member of MEASURE_GROUP.
- 3) Initial GROUP_USES_COUNT (GUC) is the set of (mmy, id) where mmy is an initial member of MEASURE_GROUP and MeasCntName(id) is a column in the _CNT snapshot that corresponds to SourceVU(mmy).
- 4) New members of MEASURE_CODES will be sub-protocols of existing protocols, or new high level protocols.
- 5) New members of MEASURE_COUNTS will identify columns of new _CNT tables corresponding to a new GLOBE protocol.
- 6) New members of MEASURE_GROUP will be subsets of an existing group, or an initial group consisting of the measure counts added for a new GLOBE protocol.

Semantic Rules

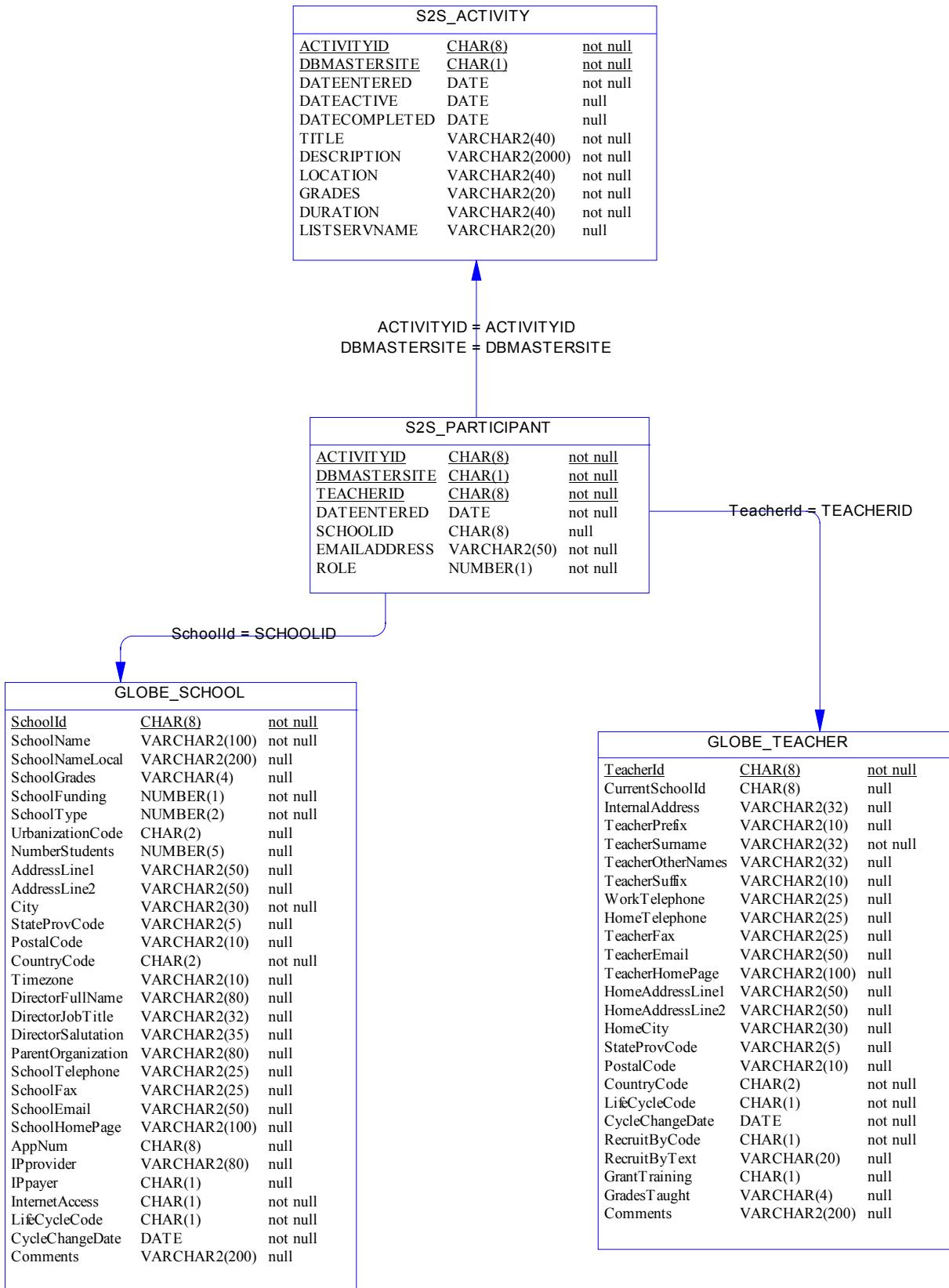
- 1) (x,z) and (y,z) in PUG implies x=y or one is an ancestor of the other.
- 2) (x,z) in PUG and y an ancestor of x implies (y,z) in PUG.
- 3) (x,z) and (y,z) in GUC implies x=y or one is an ancestor of the other.
- 4) (x,z) in GUC and y an ancestor of x implies (y,z) in GUC.

Derived from GSFC URL
[http://globedev.gsfc.nasa.gov/globedoc/2_5/ob](http://globedev.gsfc.nasa.gov/globedoc/2_5/)
 Has approx 180 rows (2/21/02)

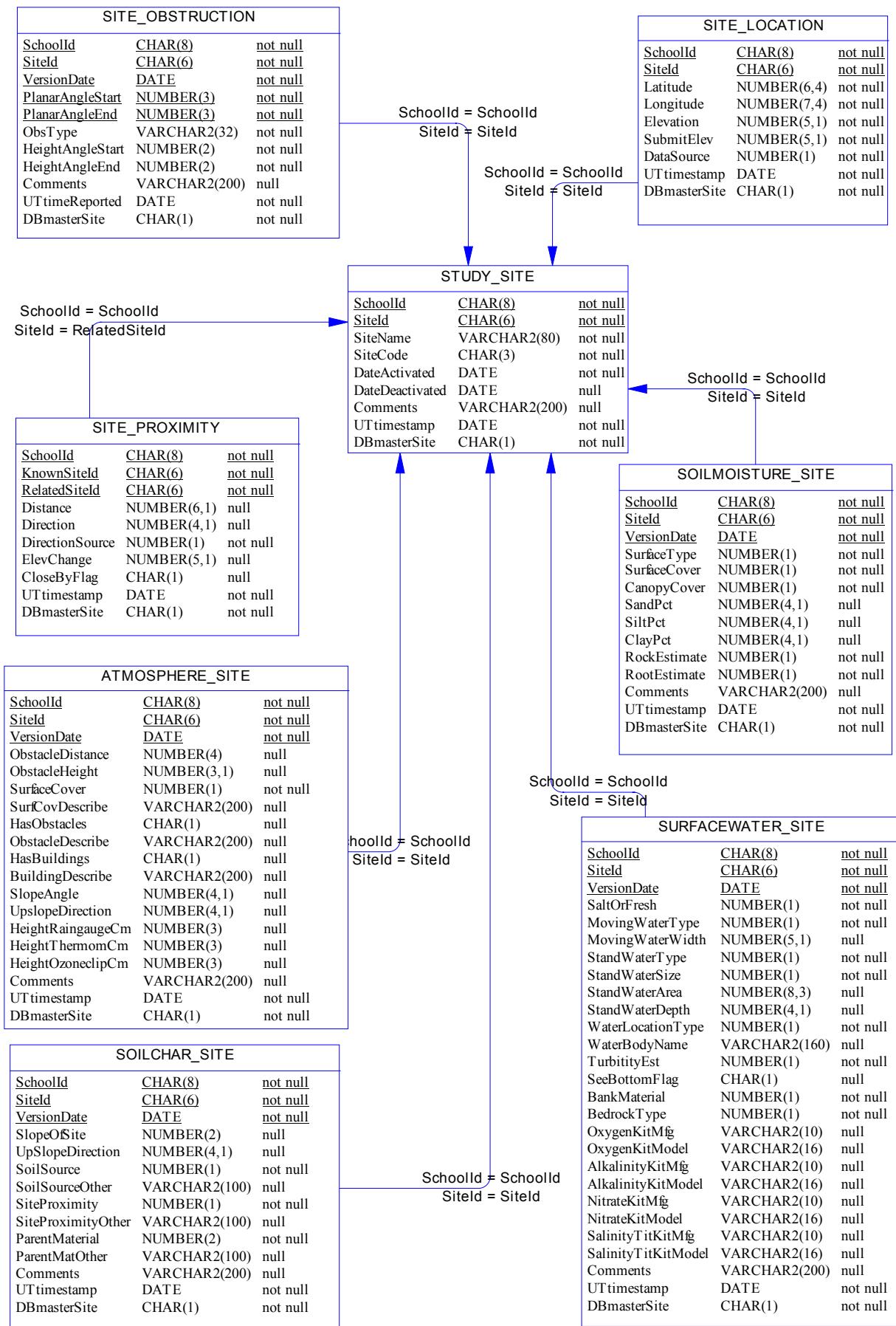
38 Diagram of School Information



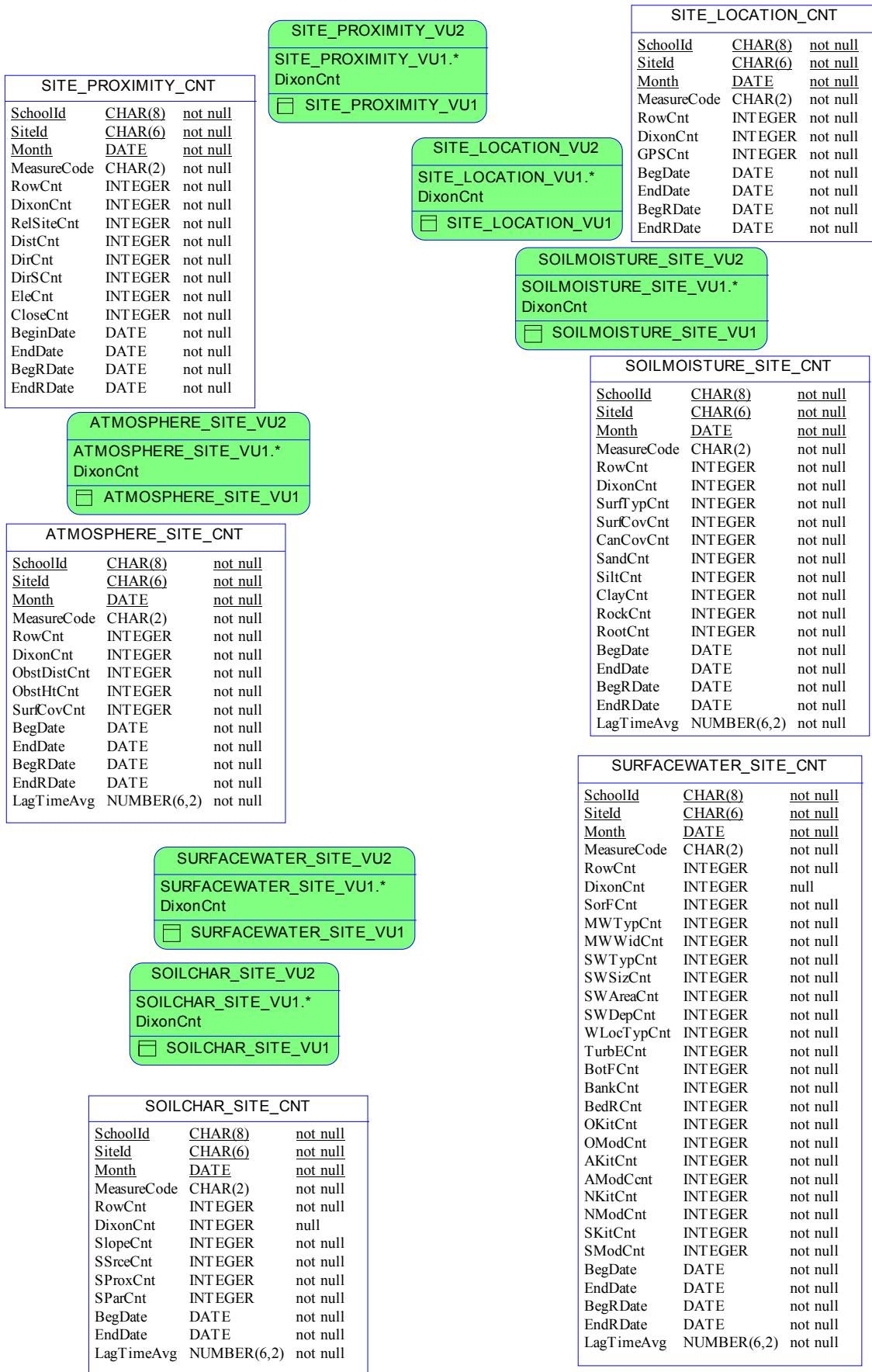
39 Diagram of School To School



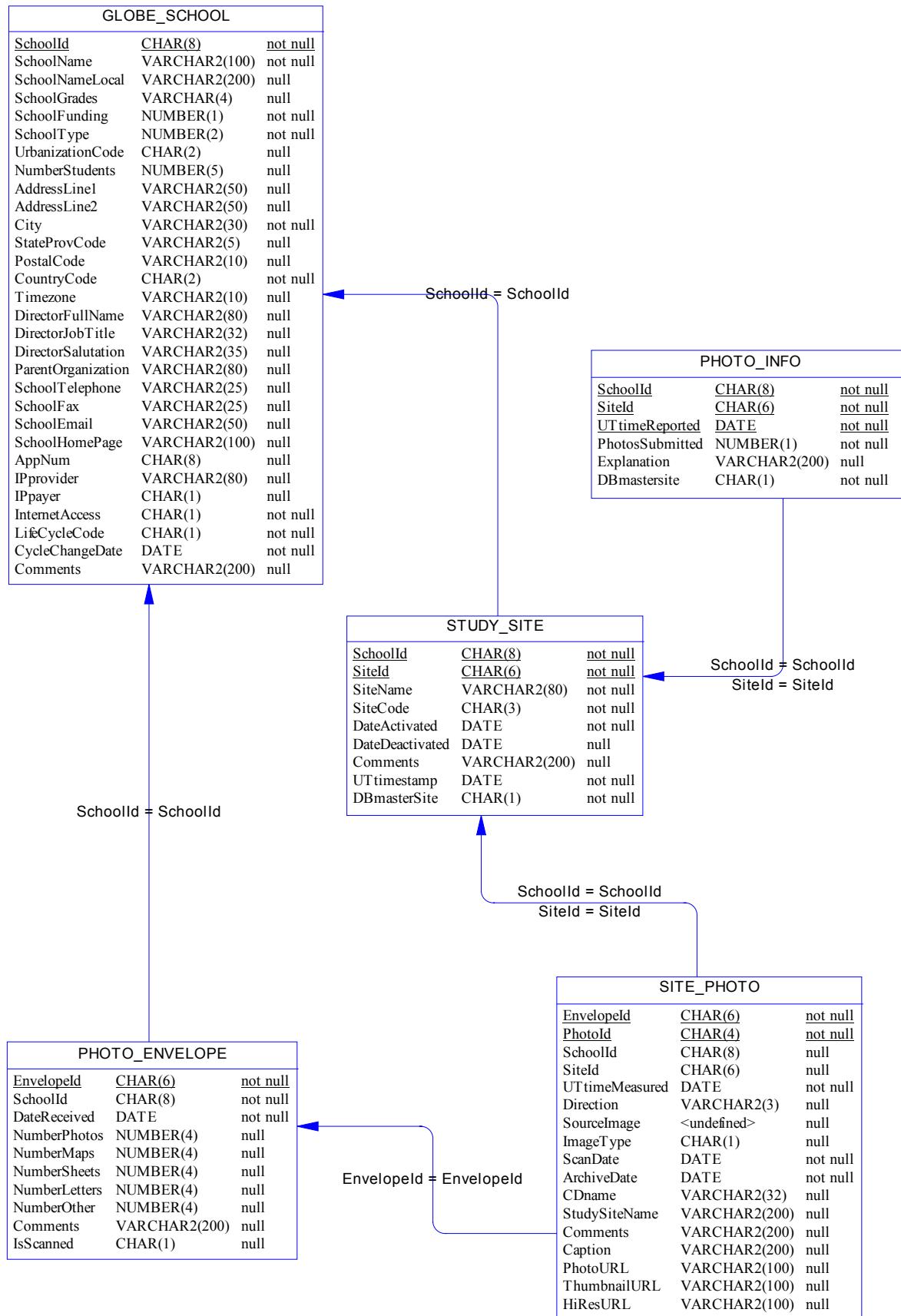
40 Diagram of Site Metadata

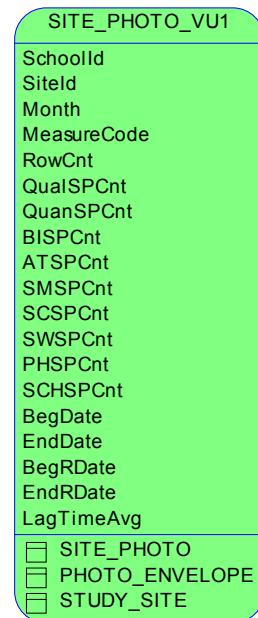






41 Diagram of Site Photographs

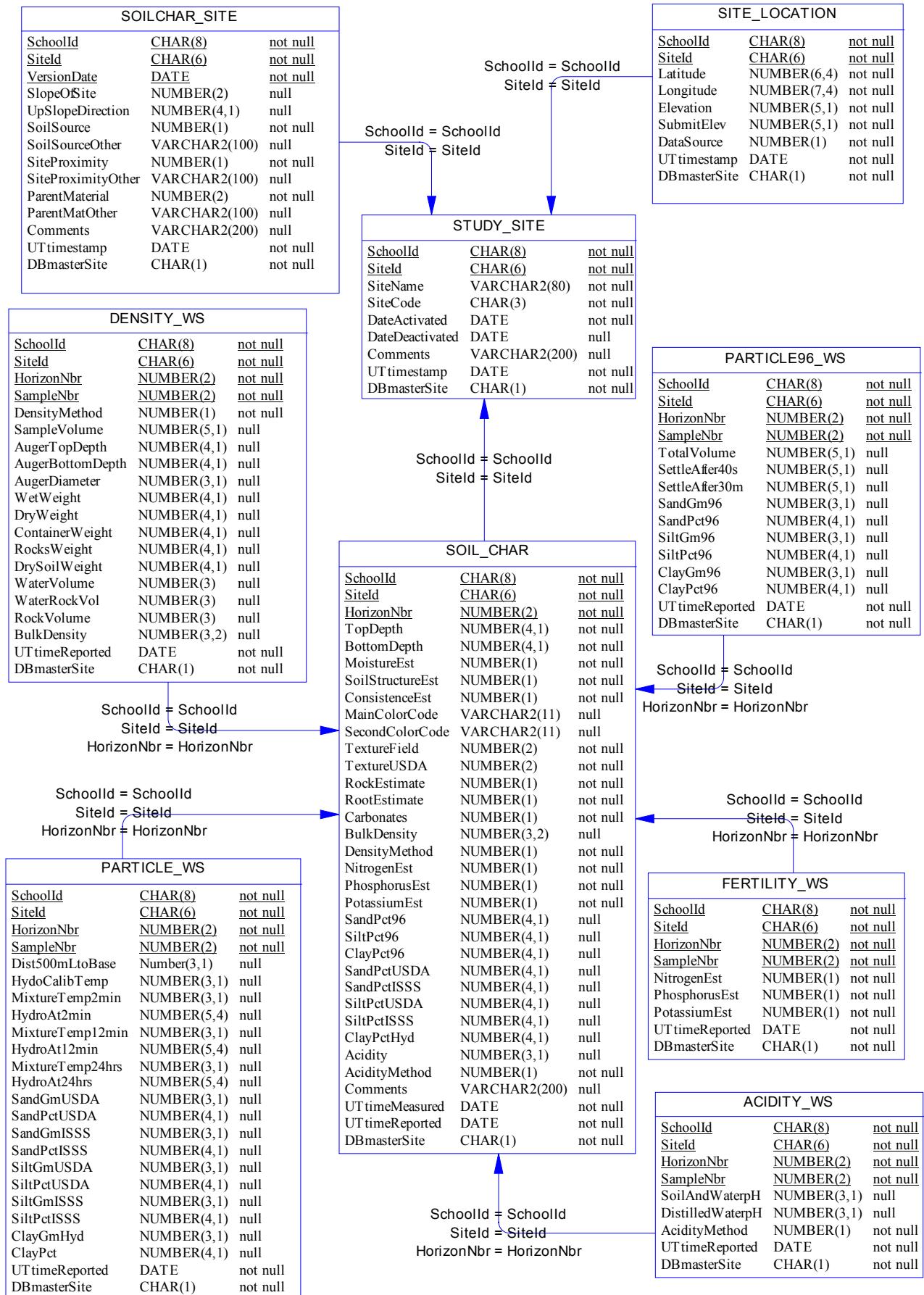




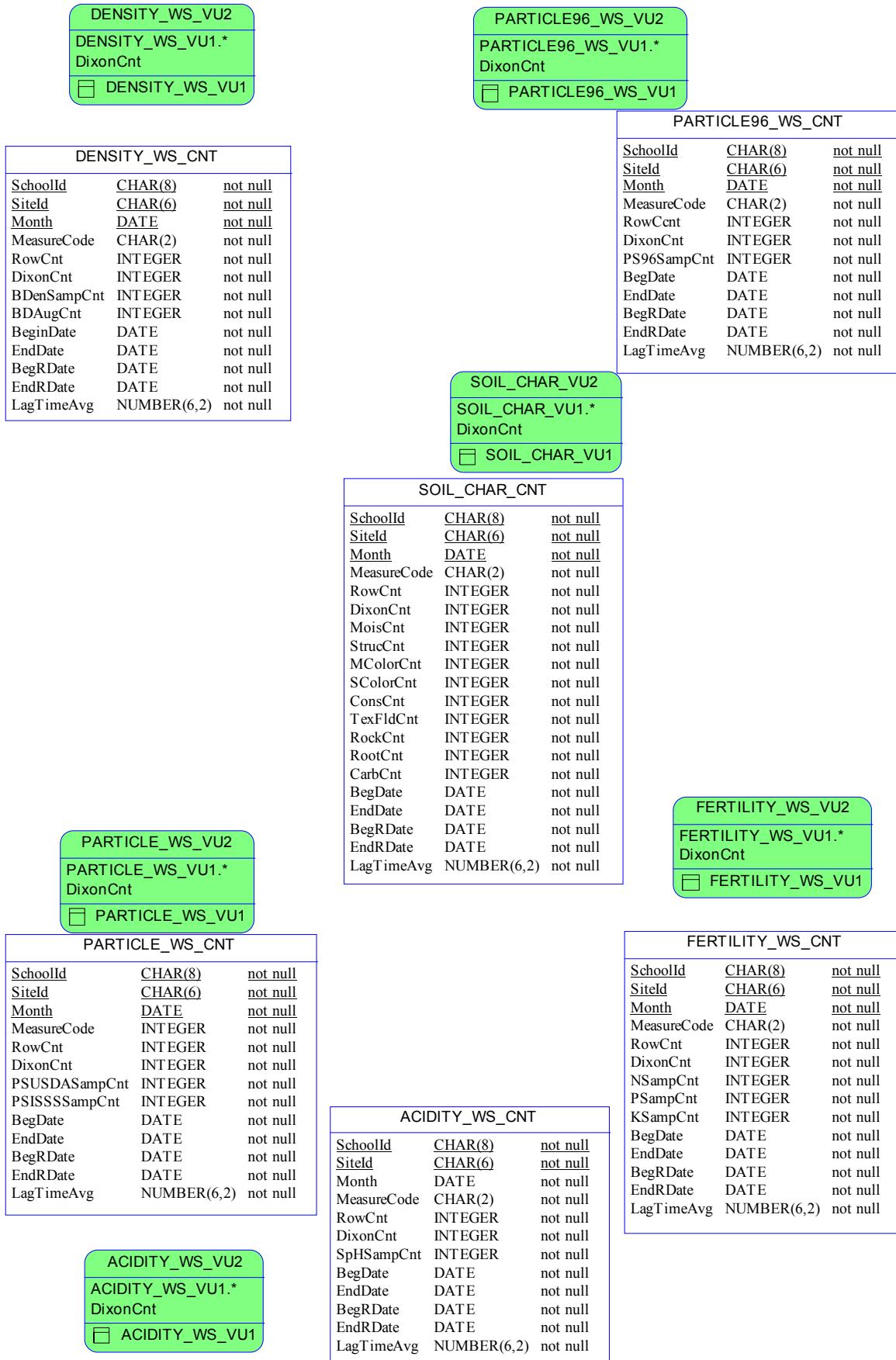
SITE_PHOTO_VU2
SITE_PHOTO_VU1.*
PhotoCnt
<input type="checkbox"/> SITE_PHOTO_VU1

SITE_PHOTO_CNT		
SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	INTEGER	not null
PhotoCnt	INTEGER	not null
QualSPCntrt	<undefined>	not null
QuanSPCntrt	<undefined>	not null
BISPCnt	<undefined>	not null
ATSPCntrt	<undefined>	not null
SMSPCntrt	<undefined>	not null
SCSPCntrt	<undefined>	not null
SWSPCntrt	<undefined>	not null
PHSPCntrt	<undefined>	not null
SCHSPCntrt	<undefined>	not null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	not null
EndRDate	DATE	not null
LagTimeAvg	NUMBER(6,2)	not null

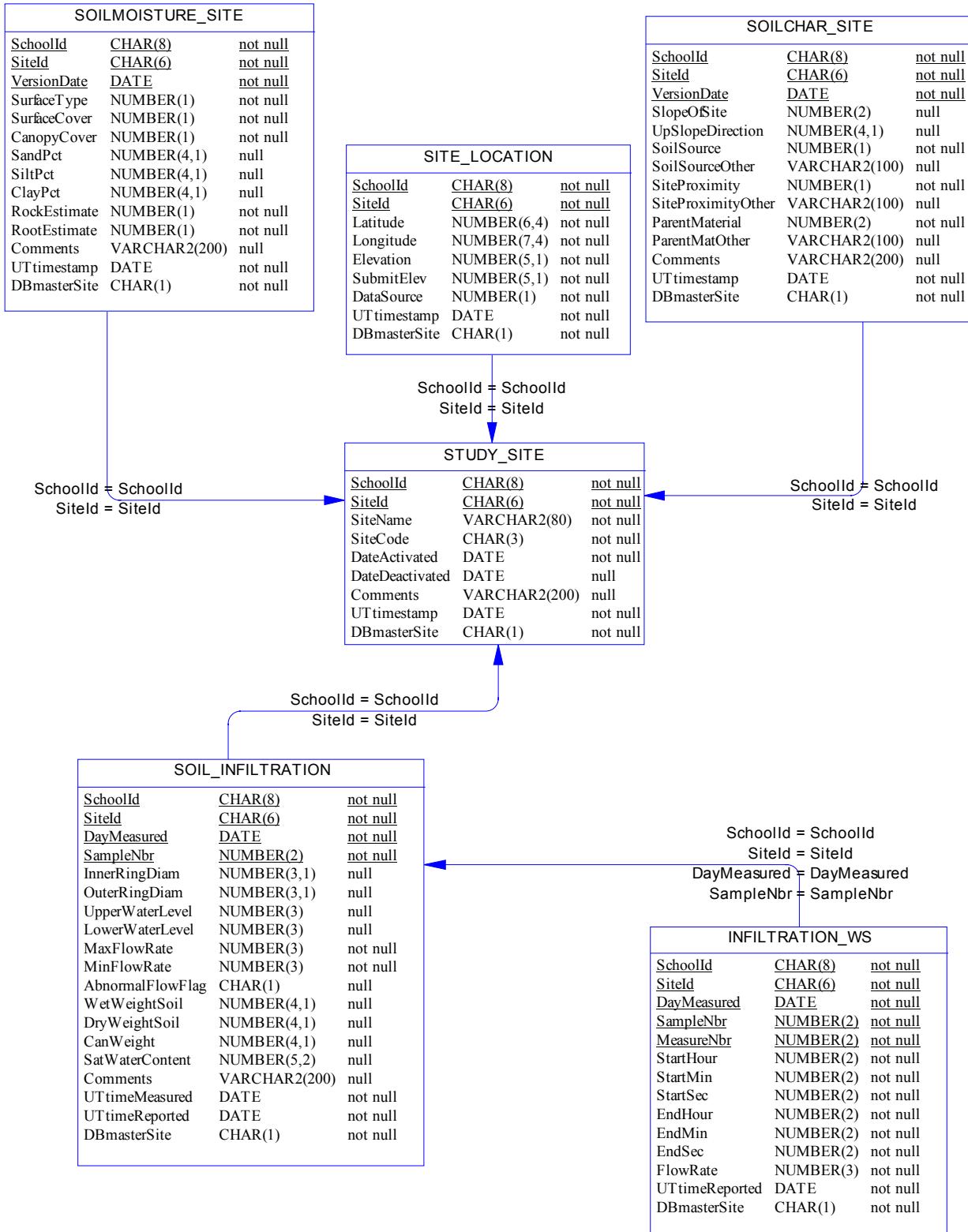
42 Diagram of Soil Characteristics







43 Diagram of Soil Infiltration





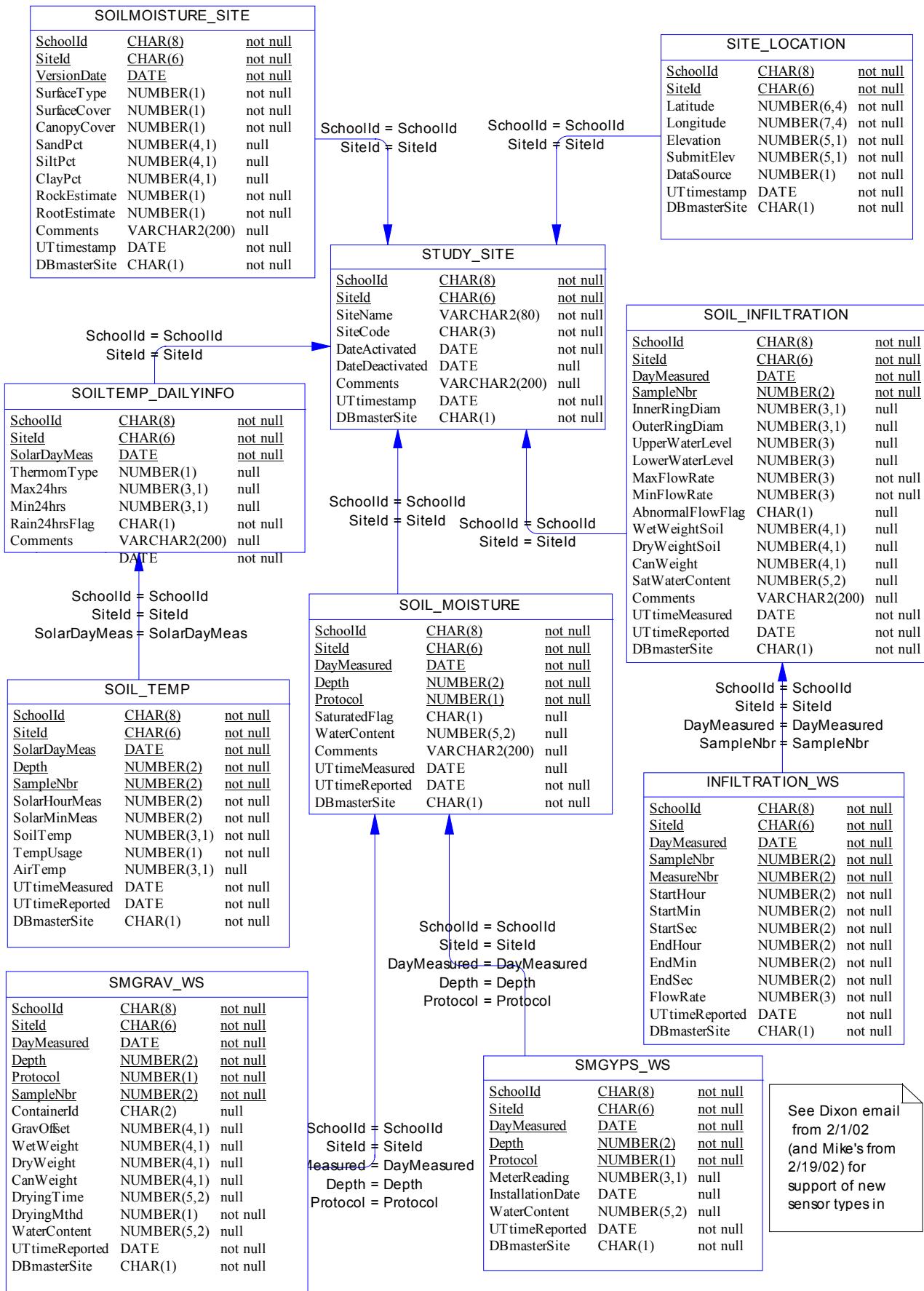
SOIL_INFILTRATION_VU2		
SOIL_INFILTRATION_VU1.*		
DixonCnt		
<input type="checkbox"/> SOIL_INFILTRATION_VU1		

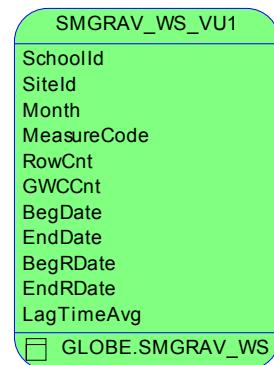
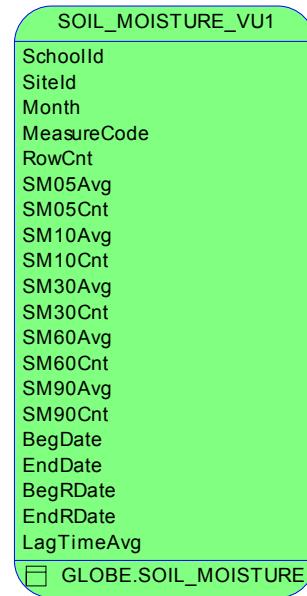
SOIL_INFILTRATION_CNT		
SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	INTEGER	not null
DixonCnt	INTEGER	null
SWCCnt	INTEGER	null
WLevCnt	INTEGER	null
RDiamcnt	INTEGER	null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	not null
EndRDate	DATE	not null
LagTimeAvg	NUMBER(6,2)	not null

INFILTRATION_WS_VU2		
INFILTRATION_WS_VU1.*		
DixonCnt		
<input type="checkbox"/> INFILTRATION_WS_VU1		

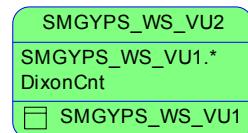
INFILTRATION_WS_CNT		
SchoolId	CHAR(8)	not null
Siteld	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	NUMBER	not null
DixonCnt	INTEGER	not null
FloCnt	NUMBER	not null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	null
EndRDate	DATE	null
LagTimeAvg	NUMBER(6,2)	not null

44 Diagram of Soil Moisture

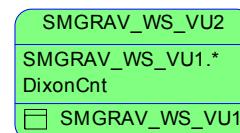




SOIL_MOISTURE_CNT		
SchoolId	CHAR(8)	not null
SitId	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	INTEGER	not null
SM05Avg	NUMBER(5,2)	null
SM05Cnt	INTEGER	null
SM10Avg	NUMBER(5,2)	null
SM10Cnt	INTEGER	null
SM30Avg	NUMBER(5,2)	null
SM30Cnt	INTEGER	null
SM60Avg	NUMBER(5,2)	null
SM60Cnt	INTEGER	null
SM90Avg	NUMBER(5,2)	null
SM90Cnt	INTEGER	null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	not null
EndRDate	DATE	not null
LagTimeAvg	NUMBER(6,2)	not null

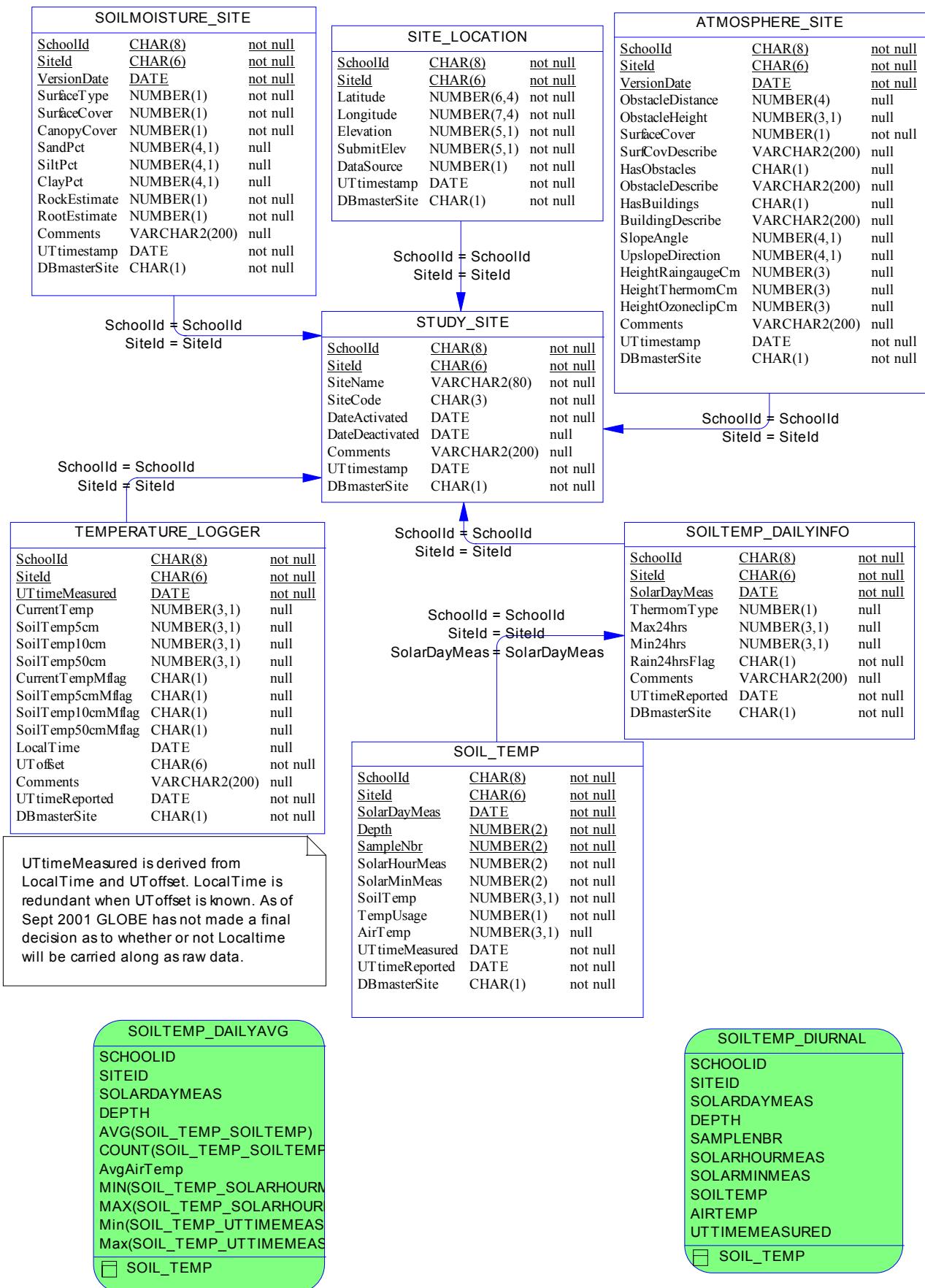


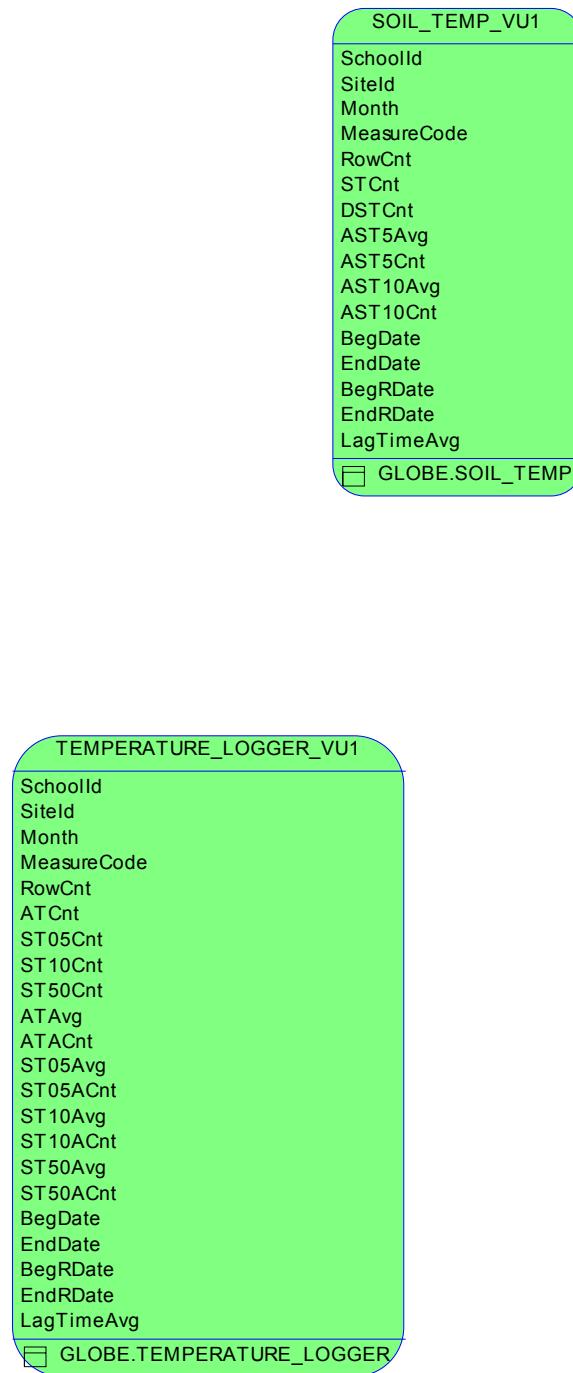
SMGYP_S_WS_CNT		
SchoolId	CHAR(8)	not null
sitId	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	INTEGER	not null
DixonCnt	INTEGER	null
BSMCnt	INTEGER	null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	not null
EndRDate	DATE	not null
LagTimeAvg	NUMBER(6,2)	not null

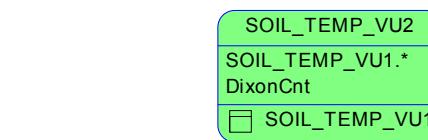


SMGRAV_WS_CNT		
SchoolId	CHAR(8)	not null
SitId	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	INTEGER	not null
DixonCnt	INTEGER	null
GWCCnt	INTEGER	null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	not null
EndRDate	DATE	not null
LagTimeAvg	NUMBER(6,2)	not null

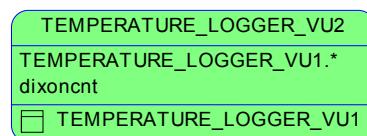
45 Diagram of Soil Temperature





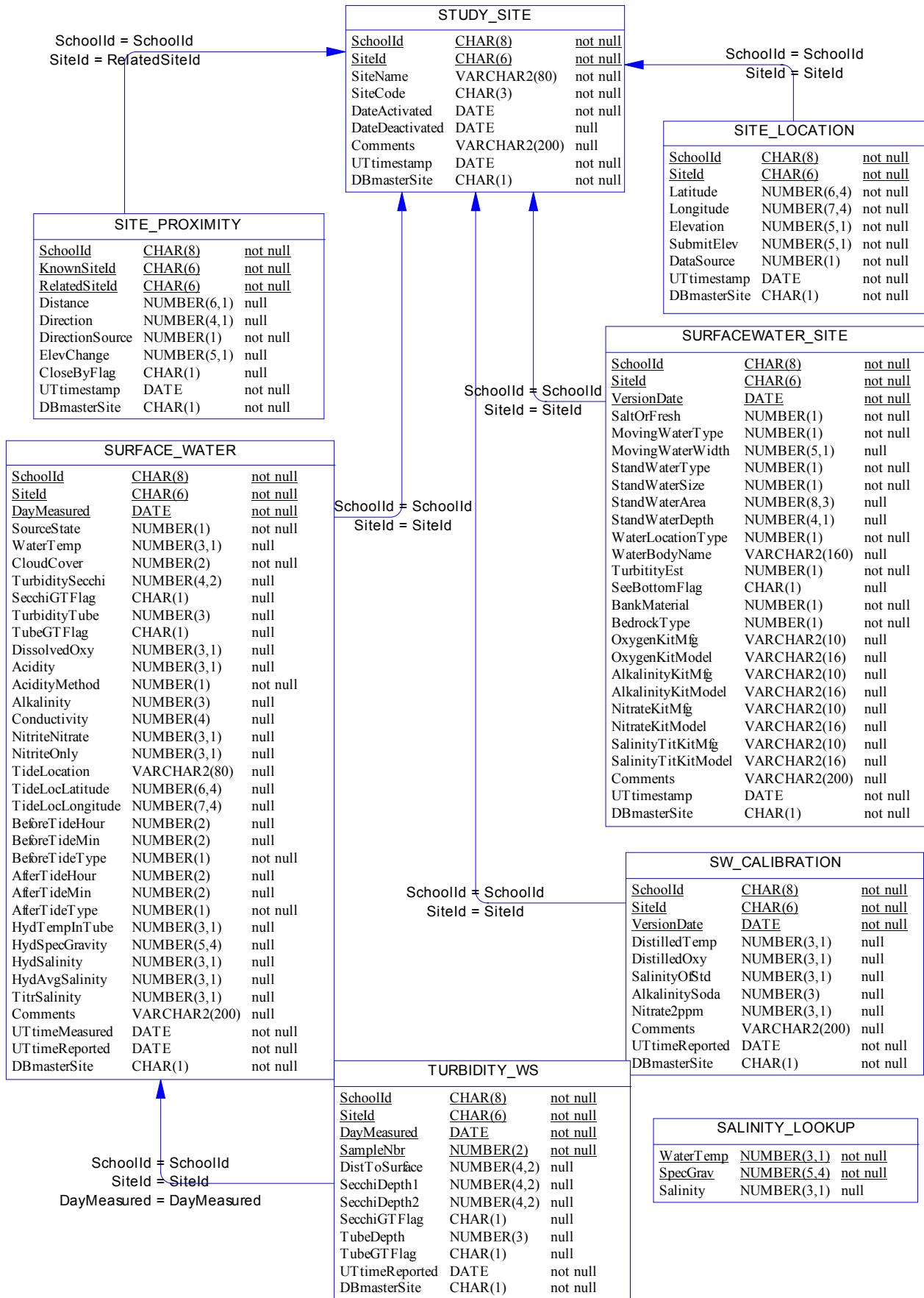


SOIL_TEMP_CNT		
SchoolId	CHAR(8)	not null
SitId	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	INTEGER	not null
DixonCnt	INTEGER	not null
STCnt	INTEGER	not null
DSTCnt	INTEGER	not null
AST5Avg	NUMBER(3,1)	null
AST5Cnt	INTEGER	not null
AST10Avg	NUMBER(3,1)	null
AST10Cnt	INTEGER	not null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	not null
EndRDate	DATE	not null
LagTimeAvg	NUMBER(6,2)	not null



TEMPERATURE_LOGGER_CNT		
SchoolId	CHAR(8)	not null
SitId	CHAR(6)	not null
Month	DATE	not null
MeasureCode	CHAR(2)	not null
RowCnt	Integer	not null
DixonCnt	Integer	not null
ATCnt	Integer	not null
ST05Cnt	Integer	not null
ST10Cnt	Integer	not null
ST50Cnt	Integer	not null
AT Avg	NUMBER(3,1)	null
ATACnt	Integer	not null
ST05Avg	NUMBER(3,1)	null
ST05ACnt	Integer	not null
ST10Avg	NUMBER(3,1)	null
ST10ACnt	Integer	not null
ST50Avg	NUMBER(3,1)	null
ST50ACnt	Integer	not null
BegDate	DATE	not null
EndDate	DATE	not null
BegRDate	DATE	not null
EndRDate	DATE	not null
LagTimeAvg	Number(6,2)	not null

46 Diagram of Surface Water





Saturated Dissolved Oxygen - Derived Values

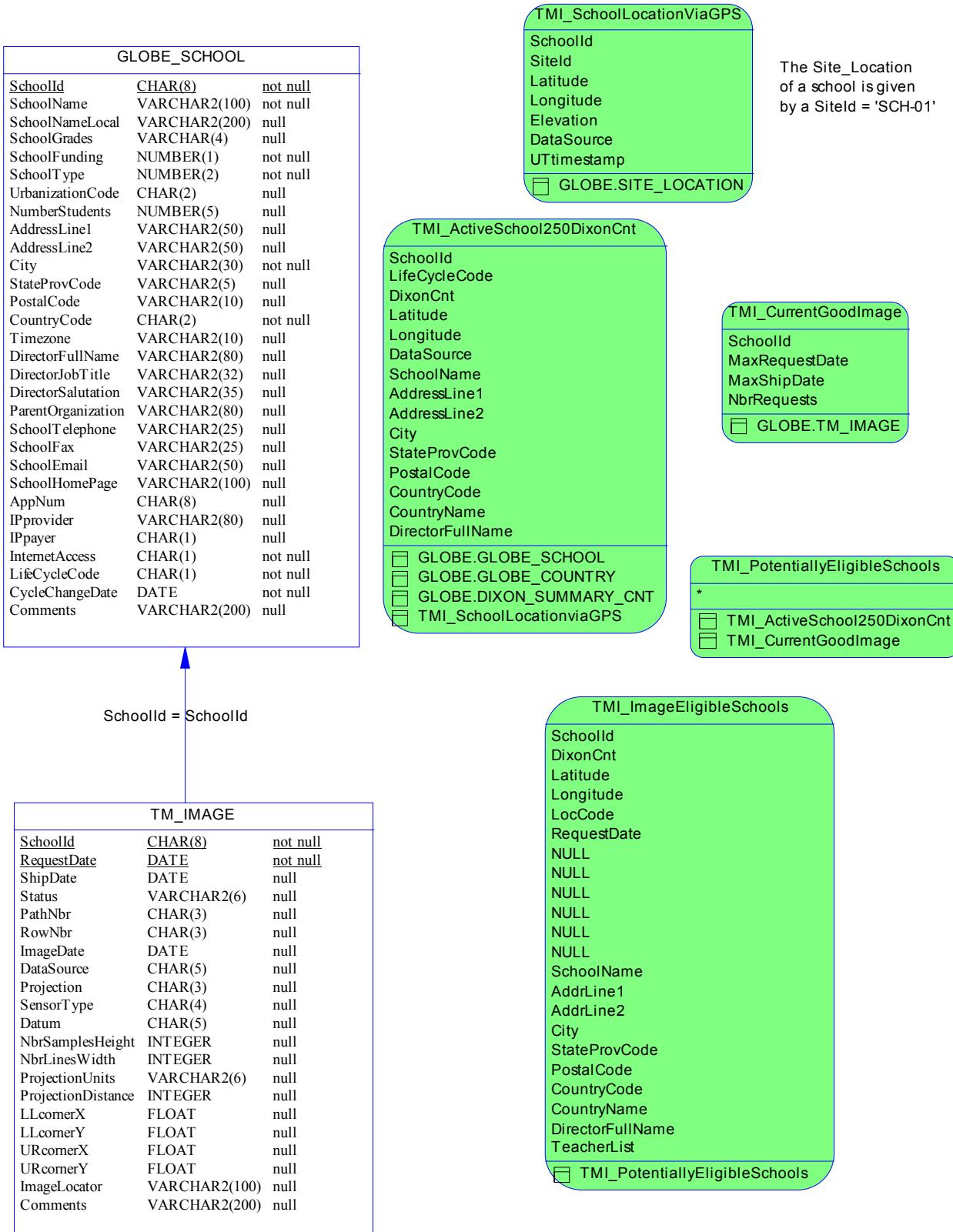


This Dissolved Oxygen view was created specifically for use by Goddard visualizations. Performance should be OK without the need for defining a snapshot. The last column is named SaturatedDO. It is a derived column dependent on WaterTemp and Salinity.

47 Diagram of TM Image Information

Database View for Landsat Image Distribution

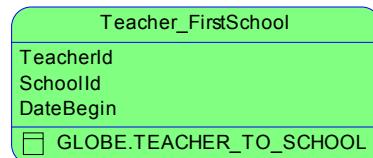
Draft Design -- June 7, 2002



48 Diagram of Teacher PreService

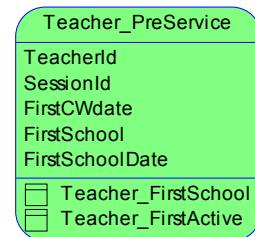
The following views are an initial attempt to identify all pre-service trained teachers. One source is pre-service teachers who were trained at an exclusively pre-service training workshop. Those workshops are identified by 'PRE-SER' in the Category attribute of the WORKSHOP_SESSION table.

The following views attempt to pick up additional pre-service teachers who may not have attended a special pre-service training workshop.

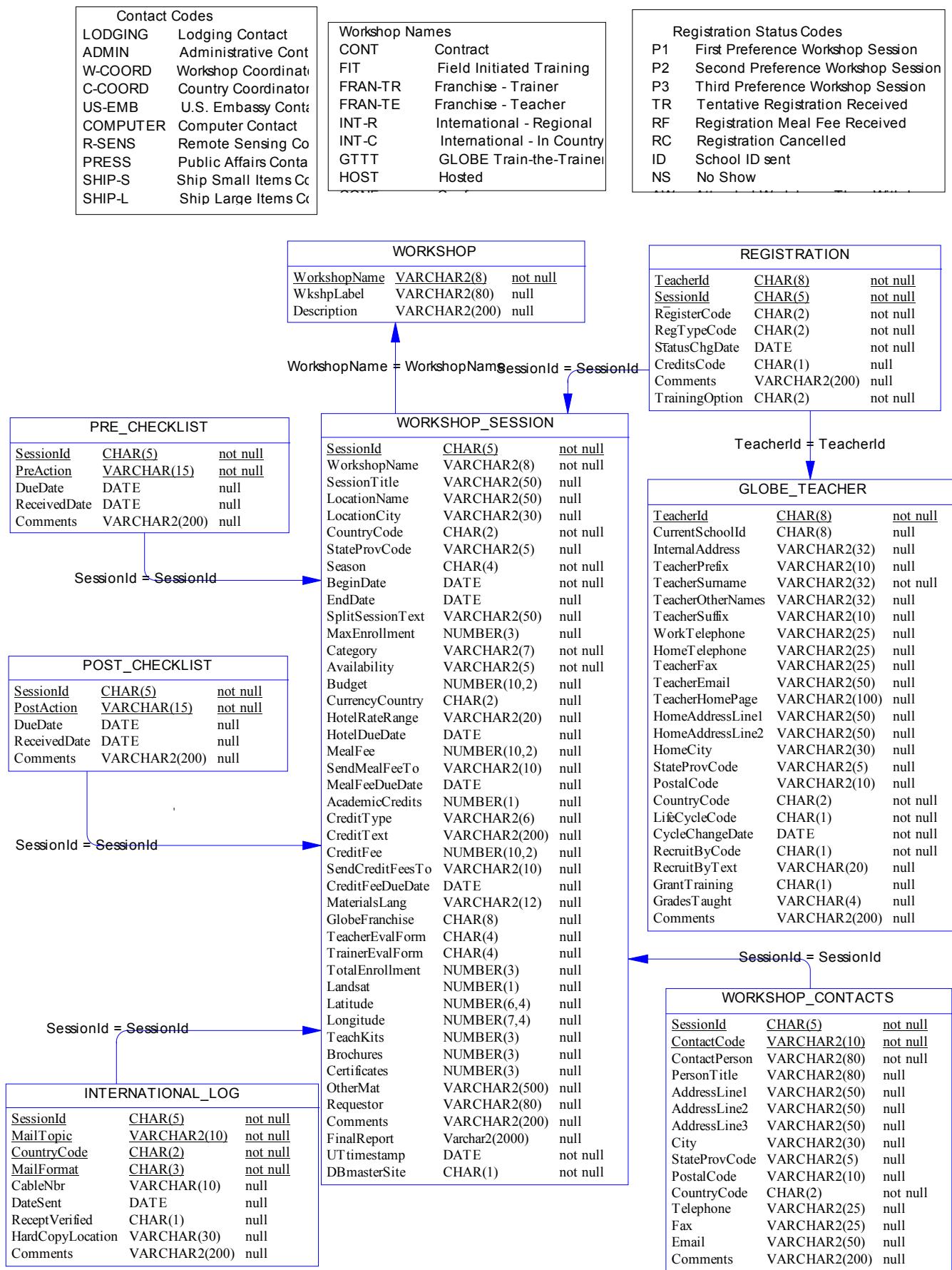


The Teacher_PreService view below chooses all teachers from the Teacher_FirstActive view whose first workshop completion date precedes the date from Teacher_FirstSchool that identifies the beginning date that they were first associated with any school.

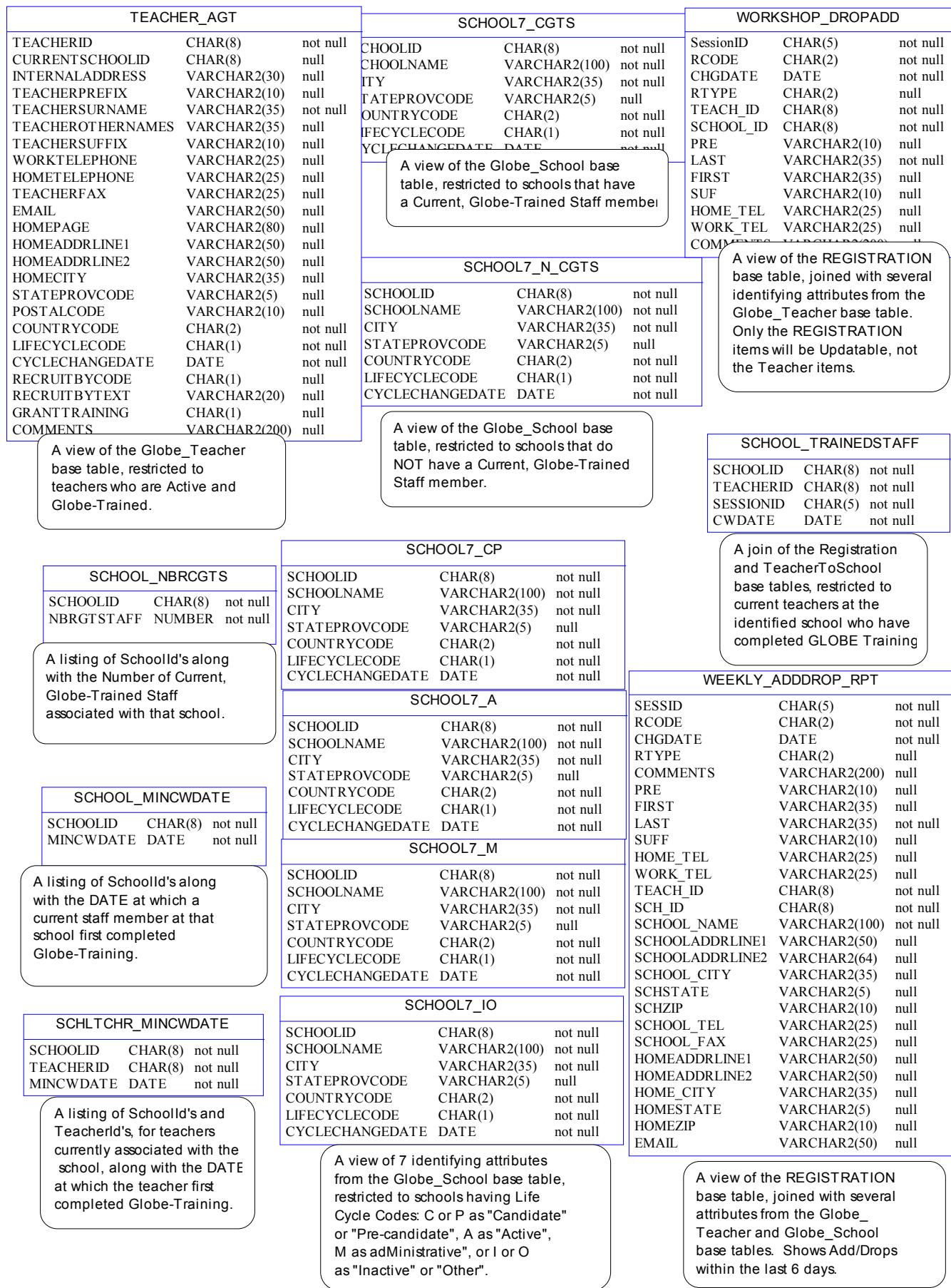
At this point there is no attempt to UNION these results with the list of teachers who attended an exclusive pre-service training workshop, although this view has substantial overlap with that result.



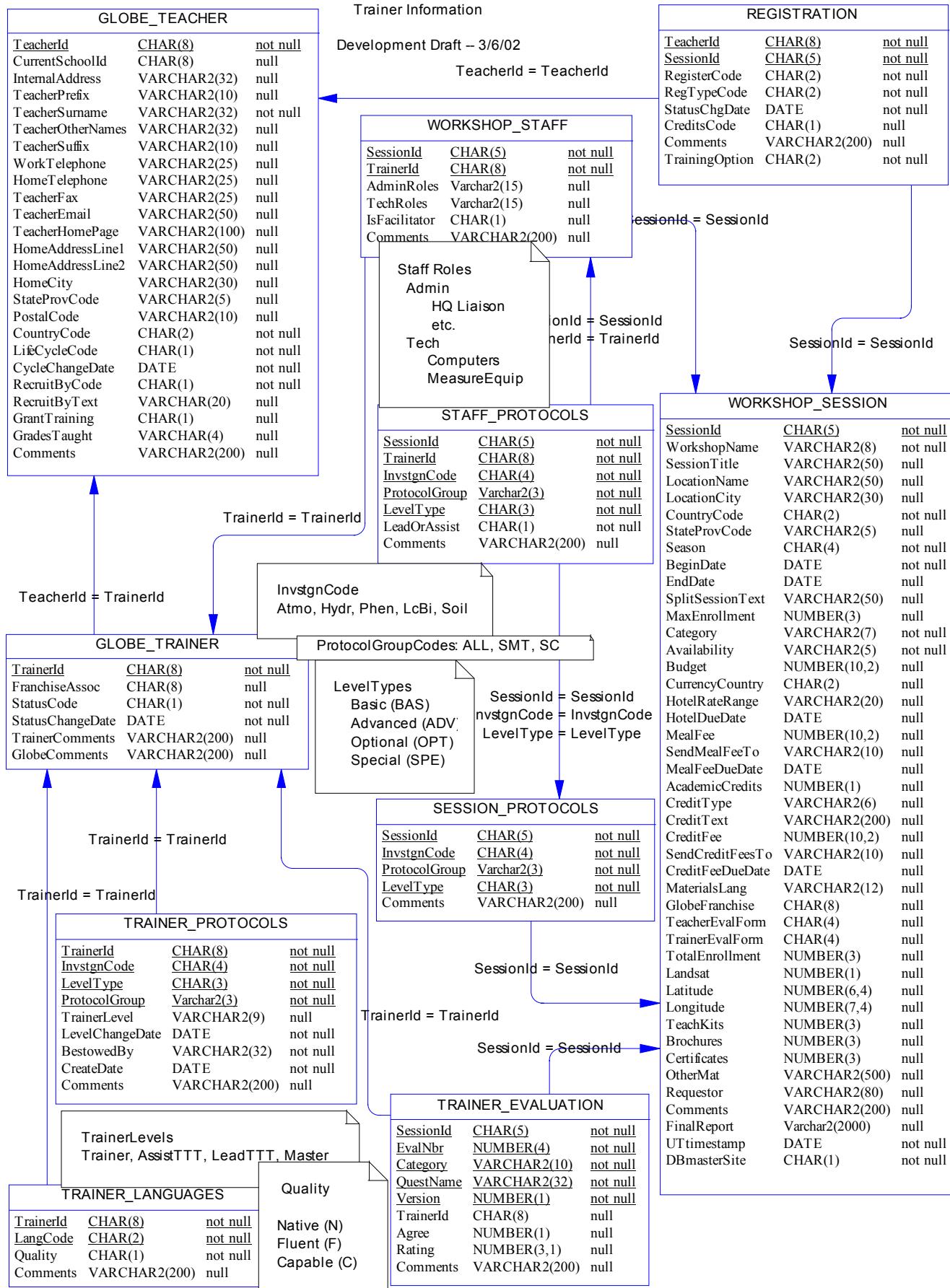
49 Diagram of Teacher Training



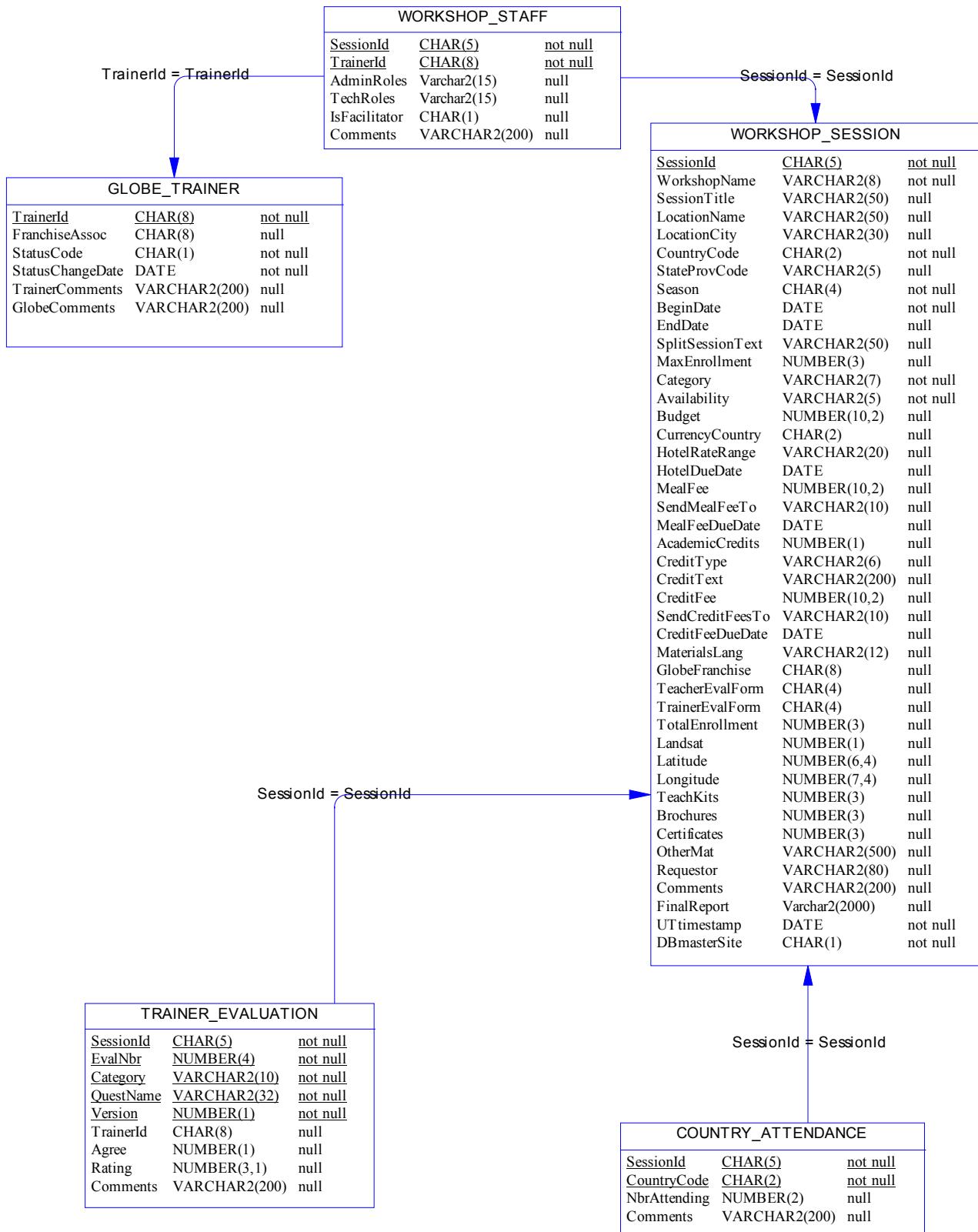
50 Diagram of Teacher and School Views



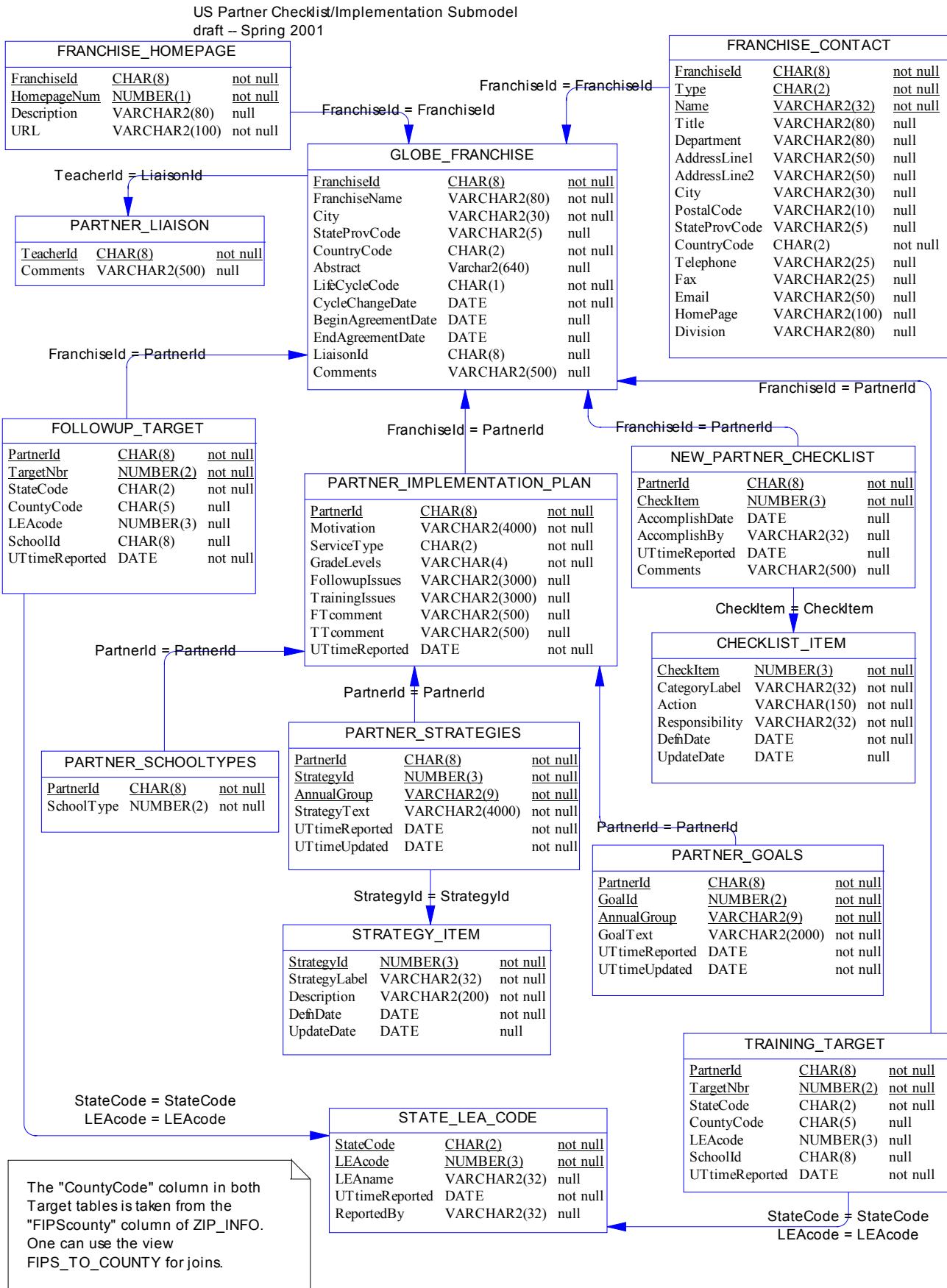
51 Diagram of Trainer Information



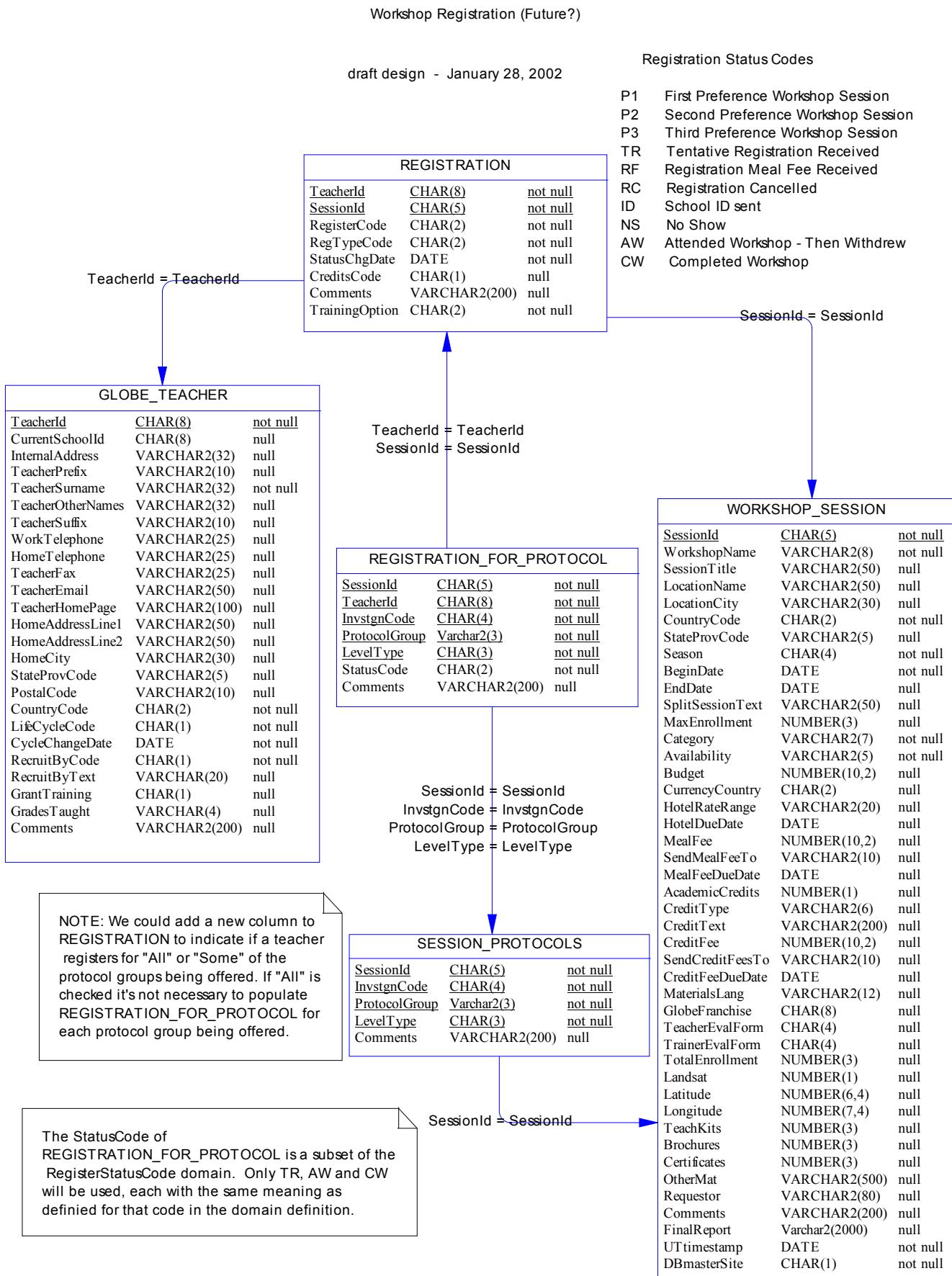
52 Diagram of Trainer Training



53 Diagram of US Partners



54 Diagram of Workshop Registration (Future)



55 Diagram of Zip Information

ZIP_INFO		
State	CHAR(2)	not null
City	VARCHAR2(32)	not null
County	VARCHAR2(32)	not null
Zip	CHAR(5)	not null
CongDist	CHAR(2)	null
TelAreaCode	CHAR(3)	not null
FIPScounty	CHAR(5)	not null
Pref	CHAR(1)	not null
TimeZone	VARCHAR2(5)	not null
DSTflag	CHAR(1)	not null
Latitude	NUMBER(6,4)	not null
Longitude	NUMBER(7,4)	not null
MSA	CHAR(4)	null
PMSA	CHAR(4)	null

ZIP_TO_COUNTY	
Zip	
County	

ZIP_INFO;

A projection on Zip and County from ZIP_INFO, where Zip acts like a primary key because zip codes do not cross county lines.

FIPS_TO_COUNTY	
FIPScounty	
County	

GLOBE.ZIP_INFO

A projection on ZIP_INFO where FIPScounty acts as a primary key.

CONGRESS_PEOPLE		
State	CHAR(2)	not null
CongressId	CHAR(2)	not null
FirstName	VARCHAR2(32)	not null
LastName	VARCHAR2(32)	not null
Party	CHAR(1)	not null
HillAddress	VARCHAR2(50)	not null
OfficeTele	VARCHAR2(25)	not null
OfficeFax	VARCHAR2(25)	null
OfficeEmail	VARCHAR2(50)	null
GlobeStaffPerson	VARCHAR2(80)	null
GlobeStaffTitle	VARCHAR2(25)	null
GlobeStaffEmail	VARCHAR2(50)	null
FIPSstate	CHAR(2)	not null
Comments	VARCHAR2(200)	null

ZIPMISSING_MISMATCH	
GS.SchoolId	
<input type="checkbox"/> GLOBE_SCHOOL	
<input type="checkbox"/> ZIP_INFO	

A list of SchoolId's for US schools where the first 5 characters of PostalCode does not occur as a zip code in Zip_Info. Includes schools with null PostalCodes.

ZIPSTATECITY_MISMATCH	
GS.SchoolId	
<input type="checkbox"/> GLOBE_SCHOOL	
<input type="checkbox"/> ZIP_INFO	

A list of SchoolId's for US schools where (City, State, Zip) from the GLOBE_SCHOOL table does not match a (City, State, Zip) in ZIP_INFO.

ZIPLOC_MISMATCH	
GS.SchoolId	
<input type="checkbox"/> Globe.Site_Location	
<input type="checkbox"/> GLOBE_SCHOOL	
<input type="checkbox"/> ZIP_INFO	

A list of SchoolId's for US schools where the Lat or Long of the school location differs by more than 0.3 from any Lat or Long in ZIP_INFO derived from the school's zip code.

